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The Lessons of Experience--Some Pertinent Suggestions

Newspapers at the present time contain more references to history and the value of knowing history than have appeared in many years. Reviews are presented of various phases of conditions which prevailed years ago with an analysis of general principles showing their application to the present times. In other words, many people are looking over the lessons of the past in an effort to ascertain their application to the present.

It is from experience that we benefit in the telephone field as well as in everything-else.

* * * *

The many telephone people who visited the World's Fair in Chicago this past summer and fall were greatly interested in the telephone exhibit there. They were especially impressed with the crowds which were present at all times. The general interest in the exhibit was all the more remarkable when it is known that its general details were planned some two years before the Fair opened.

This might be termed an achievement in public relations understanding—the planning many months in advance, of an exhibit that would attract and appeal successfully to people. In these changing times, where the constant demand seems to be for "something new," that is a real achievement.

Those officials of the Bell organization responsible for the telephone exhibit, are indeed to be congratulated upon the successful outcome of their anticipation of the public's fancy so far in advance.

The experience of years of observation and study of the public, their habits and the trend of their interest combined with the talent and ability essential for simplifying technical methods and processes to the level of understanding of the average person were effectively combined to create an outstanding exhibit. In it were combined, in just the right degree to attract and hold attention, the familiar, as represented by the telephone, with the unusual and out of the ordinary.

* * * *

In the early years of the decade beginning with 1920, the late E. K. Hall, at the time vice-president of the American Telephone & Telegraph Co., expounded the theory of "The Four C's" in the matter of public relations. These four C's were: Contact, Confidence, Conference and Co-operation.

In the years that have passed since Mr. Hall first stressed the importance of these four influences on public relations, their application by telephone people has been greatly extended.

In reports of drives for new business by telephone employes, increasing importance is given to the contacts or interviews with subscribers and non-subscribers. The subscribers are questioned relative to the service furnished them and notes are taken of their comments.

After the campaigns close, study is made of the contacts or interviews, and special attention is given to clearing up any difficulties which may be present in the subscriber's mind or in his service. Thus these many contacts have led to confidence in the telephone company which serves him.

As additional questions come up, this confidence, which subscribers have in their telephone company, readily brings about conferences with the company officials for the development of the cooperative spirit.

During the past two or three years, rate controversies have frequently been settled through conferences with the various community and civic and business interests, in addition to informal conferences before state commissions.

Although in recent years there has not been much publicity given to the four C's, it is clear that the principles, for which they stand, have been operating successfully. They have been adopted by many companies and could be used profitably by many others.

* * * *

Whenever telephone men gather there is another C brought up which is certain to arouse debate and interest. This C stands for "Collections" and, in the operation of a telephone company, collections are most important. J. C. Crowley, Jr., of St. Paul, Minn., secretary of the Minnesota Telephone Association, discussed an interesting phase of the psychology of collections in a recent bulletin sent to the Minnesota companies.

"It will not be long now," said Mr. Crowley, "before the retail merchants will begin to advise the purchasing public that there remain only so many more days to do their Christmas shopping in. Naturally those who have the wherewithal to do this shopping, will take advantage of the time, make their purchases, and avoid the rush.

"Which reminds us to call to your attention the necessity for all managers to immediately put forth all of the tact and best efforts at their command to collect outstanding accounts past due, before the shopping fever gets under way.

In this suggestion to all managers, we speak from our own experience and the experiences of many managers who have found by actual tabulation that collections on outstanding accounts past due are at the lowest point between December 15 and December 31. Therefore, we advise that every effort be made towards collections of outstanding accounts prior to December 15 in order to minimize the amount of outstanding accounts to be carried over at the close of the year.

Wise indeed is the man who profits by the other fellow's experience."

* * * *

Another well-known C word, important to telephone managers, is brought up and discussed by Secretary Crowley. It is "Credit."

"We call this to your attention," says Mr. Crowley, "for we believe that many of our managers have extended credit far beyond the reasonable point. Therefore, may we recommend that a very careful analysis of all outstanding accounts past due be made at this time, to ascertain the reasonableness of carrying some of these accounts any farther without a substantial payment on account being made on or before December 15?

* * * *

"One manager advises us that during the present year he has made a complete check of his subscribers. He has classed them as A, B and C; A being that class or group which remits promptly within the discount period; B being that group which never takes advantage of the discount period but usually remits before the end of the quarter or always pays promptly on receipt of notice of delinquency; and C being that group which is given to partial payment or promising to pay but seldom remits until the installer or lineman appears with the screwdriver to remove the instrument.

This manager advises us further that he has concentrated his efforts in collections on his group C subscribers and reduced the amount of outstanding accounts by a substantial amount during the past 60 days."

* * * *

In further commenting upon credit, Mr. Crowley continued: "We predict when we have succeeded in climbing out of this valley of economic depression and again reach the plains of normalcy, that the telephone companies which will have suffered most will be those that extended credit beyond a reasonable amount.

"In particular, we desire those companies which have made voluntary reductions, to take heed to the foregoing suggestions, for they are the ones which can least afford too liberal an amount of credit."

* * * *

In discussing when, where and the amount of credit to be extended, Mr. Crowley remarked: "By what rule or reason, if a subscriber cannot pay for three months' service, can you expect him to pay for six, nine or 12 months? There may be a reason. There is always the exception. But again, we say: protection lies in knowing your subscribers and those who are entitled to credit.

"Better face a danger once than be always in fear. Timidity on this question of credit is bound to lead to a sad awakening in the future."

* * * *

Courtesy is another C word that is important in telephone operation. In fact, the industry is noted for its courtesy. And that courtesy unquestionably has been the cause for much thankfulness on the part of many of those experiencing it.

Next week our nation again will observe Thanksgiving Day, and as we look back over our experience, undoubtedly every telephone person can find some cause for being thankful this year. Though the clouds may be dark, our experience is that they always pass. Indications now are that the clouds of depression are passing. If for nothing else, every one can be thankful for that. So give thanks Thursday.

The Electrolytic Corrosion Problem

General Features of Electrolytic Corrosion as Concerned With Lead-Sheathed Cable Systems—Classifications of Corrosion and Contributing Causes—Detection and Amount of Corrosion—Procedure for Mitigation of Electrolysis

By Walter V. Read,

Engineer and Consultant on Electrolysis and General Corrosion Problems, New York City

It is the purpose of this article to give an outline review of the general features of the electrolytic corrosion problem as concerned with lead-sheathed cable systems. In general, it is confined to a brief discussion of fundamentals, and emphasizes the importance of careful study to safeguard against wrong conclusions. The latter is necessary because of the variations of conditions with time and with circumstances. Many individual cases are the net result of combinations of causes.

Corrosion is now generally considered to be an electrochemical process. It is discussed as "electrolytic corrosion" where the anodic ("positive" or corroding) and cathodic ("negative" or receiving) surfaces are separated by appreciable distances, with resulting characteristic pitted conditions.

Nature of Corrosion Process.

Where the anodes and cathodes setting up the electrolytic action are so close together as to result in uniform corrosion effect, this is frequently described as "chemical corrosion." However, the underlying principles may be considered as similar.

TYPES OF CORROSION: Dependent upon the circumstances which contribute to the anodic conditions, various types of corrosion come under the following classes:

Stray current leakage, with structure positive (anodic) to earth.

Galvanic couple (typical battery action between dissimilar metals).

Local potentials set up by conditions such as:

Variations in ground water electrolyte, for example, dissolved oxygen or other chemical constituents.

Irregularities in composition of the metal or of its surface.

Mechanical strain.

Atmospheric influences, when out in the open for part, or all of the time (local action on dampened or wetted surface).

COMBINATIONS OF TYPE: A further classification—the so-called "cathodic corrosion"—is more particularly a form of local action which follows a preliminary electro-chemical step, consisting of the electro-deposition of corrosive elements from potassium, sodium or calcium salts in the ground water electrolyte.

Conditions favoring this form of corrosion are periods of relatively high negative potentials and fairly high concentration of these salts.

CONTRIBUTING CAUSES: Conditions contributing to electrolytic corrosion include the following:

Superposed potentials—

a. Stray trolley current,

b. "Edison three-wire system,"

c. Other grounded direct current sources, for instance, heavy railway electrifications.

Contacts with dissimilar metals.

Ground-water electrolyte:

a. Dissolved oxygen,

b. Ground-water dripping on sheath,

c. High concentration of various salts, for instance, chlorides or nitrates,

d. Low percentage of soluble silicates (which is the usual case),

e. Organic acids, such as acetic, tannic and humic,

f. Alkali earth salts (leaching from new concrete or resulting from electrolysis of ground-water constituents).

Various practical considerations that may apply in particular cases include:

Uncoordinated protective measures applied to different subsurface structures, with interchange of currents, via low resistance earth paths from one to the other at various points.

By-passes where the lead sheath forms part of a short route for stray direct current between important divisions of a street railway system or a heavy railway electrification.

Raised earth potential, as in the vicinity of high potential direct-current heavy railway electrifications with resulting collection of current on nearby sheaths, and distribution via of it laterally to outlying portions where it leaks off.

Indications of Corrosion.

In the usual practical case, the danger of corrosion, or relative freedom from such, must be determined by indications other than visual observation. In general, the indications of corrosion include:

a. Failure of the structure in question.

b. Visual indications obtainable on:

Sheath removed for various reasons,

Sheath at manholes,

Removable pilot specimens.

c. Positive potentials of structure to adjacent earth.

d. Chemical examination of:

Sheath deposits,

Electrolyte.

While the progress of corrosion may in some cases be unobserved before failure of the structure in question, it should ordinarily be possible to forestall such failures by a well-organized program of investigation and preventive measures; such may involve periodic examination of the structure (where this is possible), and potential surveys to show whether the structure is positive or negative (anodic or cathodic) to its environment.

Also it will be important to look back over past history of conditions to ascertain if some conditions not now existing may have contributed. In such event, it will be desirable to obtain evidence as to the present rate of corrosion before deciding on are corroborative or consistent.

In general, the contributing conditions involved in a particular case are indicated by electrical measurements and observations of physical conditions in the locality and, in some cases, by chemical examination of the electrolyte environment and of sheath deposits. These various evidences are relatively conclusive to the extent that they are corroborative or consistent.

In the usual typical case of corrosion the sheath is pitted but relatively free from deposits. In some cases, however, corrosion may be associated with deposits of caustic alkalis which result from the action of relatively high negative potentials on earth salts in the electrolyte. The initial deposits consist of caustic alkali and are white.

These initial deposits react to form the final sheath deposits, consisting of red, and yellow and sometimes green, lead oxides. Where acetic acid is present, the action is accompanied by white deposits on the sheath, consisting of lead acetate or lead carbonate, or a mixture of these two.

A further possibility is the occurrence of localized positive potentials between manholes that may not be evident from the routine surveys. These potential conditions might be due either to the close proximity of some other structure, such as a pipe line, or to special conditions of the electrolyte.

Rate of Corrosion.

The lead cable sheath may be anodic because of stray current conditions or because of galvanic potential differences. These two may oppose or aid each other in their corrosive effects.

The amount of corrosion depends on current density at anodic areas, and its duration. The current density is controlled by the potentials involved, the resistivity of the ground water electrolyte and by polarization or back E. M. F. effects resulting from the corrosion process.

With consistently negative potentials to earth, it is reasonable to expect that corrosion will not be the controlling element in limiting cable life. However, in an extreme case of relatively high positive potential, failure might occur in only a few days or weeks. In the more general run of cases, the greater portion of the failures that occur because of corrosion, may come within periods of roughly between 2 and 12 years.

Concentration of current leakage is an important factor. For a typical positive section between two manholes, it has been estimated roughly that the actual leakage area may be in the order of less than 1 per cent of the total sheath area. On this basis and on the basis of a loss of about 75 pounds of lead per ampere per year, very small leakage, such as in the order of one milliampere per 100 feet of sheath, may be of substantial importance.

In some cases of relatively low positive potentials, it may be necessary to guard against a tendency to underestimate their practical importance. For example, low potentials of sheath to earth may be associated with low resistance of earth contact, and the current discharge relatively large for the potentials indicated. Also, the ground-water electrolyte may be specially conducive to corrosion, even with relatively low potentials.

The foregoing naturally suggests that although in particular cases it may be difficult to estimate the severity of an electrolysis hazard, any positive potentials of sheath that prevail for appreciable periods, present possibilities of future trouble.

Mitigative Procedure—Considerations.

There is, of course, no hesitancy in dealing with the obviously severe exposures. However, the inaccessibility of the greater portion of the underground cable sheath (as between manholes) for tests and observation, naturally contributes to oversight or delay in detection and identification of trouble. Furthermore, it may be difficult to devise methods for some conditions, which may not cost more than they appear to be worth.

In striking the balance, however, it is to be noted that this problem of protection applies to a highly valuable plant, of which an appreciable percentage may achieve less than a normal life unless adequate measures of mitigation are undertaken.

Potentials due to stray trolley current have characteristic short-period variations, such as are caused by stopping and starting of cars, and trend variations associated with shifting load demands over the 24-hour period. Further identification can be made by checking the correlation of cable to earth potentials with the potentials to the power station ground, and with station load curves.

Galvanic potentials are relatively steady. In some cases they may be evident when not masked by stray current potentials; for instance, during negligible trolley load periods as in the early morning hours.

Where galvanic potentials are suspected to be important, they should be investigated by means of special testing procedures.

With reference to anodic conditions due to stray current, the first step naturally consists of reduction of current leakage from the rail system or other source of stray current, to the lowest practicable minimum.

This invites cooperation on the part of the direct-current railway companies leading to design, maintenance, and operation, of their plants in such a manner as to keep stray current down to at least the lowest minimum consistent with railway economy. It also calls for the greatest practicable avoidance of accidental or incidental attachments, or close proximity of cable sheaths to other structures, from which current might be collected.

The next step in modifying cable to earth potentials is that of electrical "drainage" comprising connection to some point of relatively low potential, thus lowering the sheath potential with respect to its environment.

The desired modification of potential relationship may also be obtained by forcing current into the earth which surrounds the sheath in question, thus raising the earth potential sufficiently to make the sheath cathodic, or negative.

What is practically a combination of these two schemes is sometimes applied in certain types of isolation cases, or cases where it is desired to affect only a very limited area. This consists of a special source of non-grounded direct-current potential introduced in a metallic connection between the sheath and a nearby "made" ground. This arrangement sometimes proves both satisfactory and economical and is referred to as "boosted drainage."

A practical case may involve the installation of a small rectifier, usually of the copper-oxide type, connected to a local alternating-current source. It is important in such cases to cut down power costs by constructing the "made ground" to have the lowest practicable resistance to earth and to minimize replacement costs by suitable size of electrode.

The foregoing methods of making cable sheath consistently cathodic are also available for the inhibition of corrosion due to anodic areas arising from local influences. While these latter cases are often difficult to anticipate, special study of cases of failure found to be in this class may point to measures which are effective in avoiding recurrence.

In some few cases there may be opportunities to deal with corrosion by taking steps to eliminate or modify the ground-water electrolyte.

Summary of Practical Procedure.

Following is a summary of the foregoing outline, together with various additional items which may be required in a complete investigation. However, all of the items may not be required in certain cases. The nature and completeness of the investigation is a matter to be determined by the supervisory personnel in charge of the case in question.

1. Preliminary review of known general conditions.
2. Potential and current surveys.
3. Overall checks from a central testing point where practical and economical.
4. Visual observations of:
   Cables,
   Special test pieces.
5. Investigation of environment conditions:
   Potential variations with electrode similar to structure,
   Potential variations referred to non-polarizable electrodes,
   Chemical investigation.
6. Physical data, such as layout of structures, soil conditions.
7. Variations with time and circumstance, such as load conditions, changes in ground-water level, etc.
8. Analysis of data.
9. Selection of remedial measures, which may comprise:
   Elimination of source of trouble within practical limits,
   Reduction of anodic potentials:
   "Electrical drainage" to reduce potential of structure to a point below that of environment,
   "Raised earth potential"—to achieve same result (make structure cathodic to environment),
   Combination of these two ("forced drainage").
   Electrical isolation of structure:
   Insulating joints,
   Insulating coatings.

Proper diagnosis may require a considerable knowledge of the physical relations of other subsurface structures and the measures of mitigation that apply to them.

Cooperation with Other Utilities.

Where more than one of the utilities desire to protect their plants, it is important to avoid measures which are competitive. Preferably, cooperation should be secured to obtain the best engineering solution, taking the various structures as a whole; otherwise, measures applied to one structure may react undesirably on other structures. This should naturally include such direct-current railway companies as have relation with the problem.

This cooperation may lead to a certain amount of interconnection of the lead cable sheaths of various utilities and draining them as a unit rather than individually.

Economics.

The matter of economics in relation to corrosion prevention must be given due consideration. The factors concerned are:

Extent and degree of corrosion hazard,

Value of the plant as a going concern, and

Cost of mitigation.

Conclusions.

The preceding discussion outlines a general point of view and a general line of procedure. It has been emphasized that due to the numerous variables that enter into practical problems, great care is to be taken in the matter of conclusions. These should be based on comprehensive data and interpreted from an adequate background of experience and general knowledge of fundamentals.

Some cases may require the combined ability of an engineer, a scientist, an historian and a detective. In any event, it behooves one to be wary and thorough in order to avoid wrong conclusions. A valuable and important plant merits the attention necessary to insure service reliability during its reasonable economic life.

What Operators Want to Know

Trying Conditions Frequently Arise in Telephone Work as in Other Lines of Business—Tact, Diplomacy and Sense of Humor Needed to Cope With Difficult Situations That Come Up—No. 126

By Mrs. Mayme Workman,
Traffic Supervisor, The Illinois Telephone Association, Springfield, Ill.

Telephone operators, like other people who come in contact with the public, frequently have difficult situations to meet. There is an old saying, "it takes all kinds of people to make a world" and since each individual is different, there is no set of rules that can be applied to meet all the conditions which arise from time to time.

Anyone who deals with the public cannot wear his feelings on his sleeve. The most successful men and women in business today are those who are able to keep their poise, their temper and their sense of humor under all conditions, no matter how trying.

In question No. 1, the operator is asking what to do with a customer who calls her out of bed to "kid" her, and who is so persistent that he keeps on calling, even after she has given him no encouragement? Here is a condition that calls for patience, tact and diplomacy. The fact that the operator was called out of bed indicates that this question comes from an operator working in a small exchange who is only called upon to answer emergency calls during the night hours.

The party doing the calling is perchance some poor fellow troubled with insomnia or perhaps he has imbibed too freely of the

juice of the grape. At any rate, the writer would suggest that the night operator explain, in a kindly way, that she is not permitted to carry on personal conversations while on duty. If this does not satisfy him, find out if he wants a number and if not, have nothing further to say to him. No doubt in a short time he will become discouraged and will seek new fields for entertainment.

However, if this is a nightly occurrence, it should be reported to the manager, who undoubtedly will see that this annoyance ceases.

It is well for an operator to remember to conduct herself in a businesslike manner at all times. This particularly applies to operators working in a small exchange where the operator has face-to-face contacts with her customers. Be polite and friendly, but not too friendly. Always conduct yourself in such a manner that your customers will realize that the telephone office is a place of business. Self-respect commands the respect of others.

Questions from Illinois Operators.

1. What should a night operator tell anyone who calls her out of bed to "kid" her and even though she does not pay any attention to him, he keeps calling?
2. On a person-to-person call to a hotel and the room number, when rung, does not answer, should there be a report charge?
3. On an "in-collect" call which necessitates a messenger, does the OTC or TTC time and supervise the call? (The messenger is not collect).
4. How soon after announcing "ticket" to toll center should she be ready to accept ticket?
5. If the calling party is out, what report must we put on ticket?

For answers to these questions from real Illinois operators, please turn to page 26.

Economic Conditions and the Outlook

Progress of Recovery from Depression—Fundamentals for General Business Recovery—Necessity of Executives Understanding Simple Laws of Economies—Outline of Address Before Annual Illinois Telephone Convention on October 25

By Dr. Ivan Wright,

Professor of Economics and Finance, University of Illinois, Urbana, Ill.

Recovery in business as begun last March, continued with unprecedented rapidity until about the middle of July. Then business, as represented by the indices of production and trade, turned down and has continued this downward movement up to the present time.

Recovery was natural after such a long period of depression, and just as natural is the slump that began in July and is continuing at present. The recovery seems to me to have been genuine, inasmuch as business recovery was not confined to the United States but spread throughout the world. Every country reports remarkable improvement in business conditions and a gradual increase in prices.

The statistics of recovery indicate a more rapid and extensive recovery in the United States than in any other country in the world. Also, at the present time, the United States is experiencing a recession from this earlier recovery that is more severe than that found in the records of other countries.

The speed of recovery in this country was, perhaps, influenced to a large extent by the threat of inflation. As a consequence, there was much unsound speculation. Even excessive inventories in raw materials were acquired by many businesses. Adjustments of unsatisfactory credit conditions that should have been made were not made.

The increase in employment did not come up to expectations, nor did the increase in wages. Consequently, consumer buying power has not moved from the markets the supply of goods available, despite the fact this present supply of goods may seem low in comparison with inventories during periods of prosperity.

Well-collected and measured facts show the actual consumption of the necessaries of life, represented by such articles as food supplies, remain about the same during periods of depression and prosperity. The prices, however, are lower—and as a consequence, profits in these trades may be greatly reduced—but the actual volume of goods consumed in many consumer industries has not materially declined during this depression, or any other depression we have had. The real decline in business seems to have been in the capital industries.

Recovery from Previous Depressions.

In the past, recovery has come with improvement in the capital industries, usually accompanied by a demand for long-term credit. Up to the present, recovery in the capital industries has been slow and, in fact, can hardly be said to have begun. If the market for private capital, as represented by new bond issues, indicates the recovery in capital industries, we have not yet begun to recover. As a result, the heavy industries that employ most labor and have the largest demands for raw materials, have so far not become an important factor in the recovery period.

It is claimed by some that recovery in the heavy industries is restrained by the Securities Act and certain banking legislation. To a certain extent, this may be true, but to be sure this is not the whole story. Industries will recover and obtain capital when there are demands for their products.

There are other fundamental economic conditions which restrain general recovery. Some of these conditions are world-wide and not confined within the scope of any one particular industry or group of industries.

Recently in the Wall Street Journal, Thomas Woodlock, quoted from a speech made by Professor Jones of Eaton College, England, what seemed to me to be five clear-cut statements of fundamentals to general business recovery. These statements are here repeated:

1. There must be some kind of practical equilibrium in the trade of the various nations with each other, the distribution of this trade being determined in the main by costs of production and (reasonably stable) tariff policies, and changes in this distribution being rather gradual.
2. The savings of people generally must, in the main, flow into long-term permanent investment so that the amount of "liquid" capital does not grow out of proportion.
3. The long-term investments of each country should be appropriate to and correlate with their industrial structures.
4. Tariffs must not be used to correct temporary dis-equilibriums in the balance of international payments.
5. There must be somewhere a central bank or reservoir which can mobilize the liquid credit and direct it to wherever it may be needed.

If you will ponder these fundamental conditions described, it will be clear that a rapid recovery on a sound basis is improbable. During the depression, economic and financial relationships in our society have been so modified, and in some cases shattered, that it will take a long time of slow and careful growth on a sound basis to bring back what we understand to be normal conditions in industry and trade.

Industry to Manage Itself.

To bring about this recovery and to maintain sound economic conditions in the future, industry is going to be asked to manage itself through its respective trade associations in such a way that the best interests of society will be served as well as healthy conditions in industry maintained. In fact, the two are complementary parts of the same condition.

This imposes a responsibility upon busi-

ness executives more burdensome than their responsibilities as executives in the past. To quote from Philip Cabot, in his address before the National Association of Cotton Manufacturers on October 4:

Standards of conduct must be laid down which are both economically sound and in harmony with the moral and political instincts of the nation. This is a task demanding statesmanship of the highest order. These trade associations must be *led* and dominated by men of high character and broad vision, combined with sound business judgment and rare political sagacity. If these trade associations are to have any hope of success, they must be composed of men of as truly professional type as can be found anywhere in this country.

In the future, each leader in a business is going to be as much concerned with the economic relationships of his business to other businesses as he is with the conditions within his own business, because each business shares the general fate of economic conditions. No business can be prosperous in a community harboring a business or group of businesses which, due to their anti-social activities, create unbalanced conditions in the community or in the country. They are just as truly destroying their own economic progress as that of their competitors or other lines of business.

The telephone business is no exception. This business thrives with the general prosperity of the community. It is much the duty of the business executives in the telephone companies to understand the fundamentals of a sound currency and credit system, sound banking practices, sound and honest investment banking practices, necessary and unnecessary speculations, artificial and unwholesome business practices of all kinds within the community and the country; and to seek to educate your employes, your trade association and your statesmen to the importance of balanced economic conditions and the need for obeying the simple rules of economics.

If executives such as your companies have, would understand the simple laws of economics and obey them in their practices, and executives of other business enterprises would do likewise, your difficulties arising from depressions, legal and political controversies and public relations would be greatly reduced if not annihilated.

This is not merely an ideal; it is a fact that when we violate an economic principle in value, price, or money, this must be fully compensated for, and usually a heavy toll in addition. It is possible to evade or avoid legal and political difficulties within society, but "Old Man Economics" brooks no interference. He forces justice and collects a large price for his services.

Society Has Changed.

The economic texture of society has changed and it is important that business practices change with the changing conditions of society. When the telephone first came into use, most people in this country lived on farms, fed and clothed themselves and the principal means of transportation were the steam railroad and the horse and buggy.

Today, 70 per cent of the people of this country live in towns and in cities and depend upon wages with which to buy food, clothing, and transportation by way of the automobile.

It is reliably said that some 80 to 85 per cent of the people of the country do not have a bank deposit or any eligible collateral on which they can borrow money at a bank when in need. We know that less than 20 per cent of the people have insurance and savings. As a consequence of these conditions, the great majority of people must tide over personal emergencies through borrowing from accommodating creditors or personal finance companies, or default on paying their bills.

An emergency or a severe depression, such as we have been going through completely upsets the personal, economic, and financial relations of individuals and businesses in their community.

Because of these changed conditions, it is natural for many people to assume that the fundamentals of economics have changed. Indeed, they have not, but it has become more and more difficult for the management of our business affairs to conduct them so as to comply with the new economic conditions. Prices are still determined by supply and demand. In the long run, buyers make the price and not sellers, because the buyers must make the price out of what they have with which to buy.

Unless, therefore, every business and financial institution in society which shares in this exchange of goods and services, whether they be communication or food supplies, so manage its affairs jointly as to maintain this finely-balanced condition of economics—whereby the individual sells his goods and services and in turn pays for the goods and services he uses—each of us suffers the penalty of readjustment of our business and personal affairs to meet the conditions in society as they are, not as we would like to have them.

It becomes, then, our duty to help make them what we would like to have them, by understanding and applying the simple rules of sound economic relations and educating associates and competitors to these economic relations as the best code to follow.

THANKSGIVING

By Miss Anne Barnes,

Traveling Chief Operator, Iowa Independent Telephone Association, Des Moines, Iowa

Back in the fall of 1621 our Pilgrim fathers and mothers faced about the same sort of winter that we, their descendants, are about to encounter. We hope that our great American table of plenty will provide food for everyone somehow. There is enough for everybody now. But no one has been able to figure out why some must starve, in sight of good nourishing food, when there *is* enough for all. If there were a famine, instead of plenty for everyone, then there would be a reason for the distress among so many people.

History relates that one day when the little Pilgrim band was gathered together in conference, with apparently nothing except gloomy prospects to discuss, one hopeful man suggested that in spite of the threatening disaster to the colony, they set aside one day of Thanksgiving for what they *did* have; that they pray for courage and faith strong enough to carry them through, no matter what the coming winter held in store for them.

And that one hopeful man inspired the rest of the band to be hopeful. In that state of mind they set aside a day of Thanksgiving for what they still possessed. But our Pilgrim fathers did not stop with an attempt to keep up a courageous spirit and daring hope. They became very busy in the newly-cleared fields and when the first crop of corn was ready they gathered what there was to gather. Then, their leader and spokesman, Governor Bradford, sent out an invitation to a friendly Indian chief, named Massasoit, to come to Thanksgiving dinner and bring his braves along. The Pilgrims were willing to *share with others what little they had.*

This invitation idea must have pleased the Indian tribe immensely, and it suggested to them the idea of *sharing.* They got busy and gathered venison, wild turkey, fruits and vegetables, and brought them as a contribution to the Pilgrims' first Thanksgiving table.

What a happy time it must have been for that little group of 55 survivors of the original Pilgrim band, as they set about preparing for the Thanksgiving dinner for their guests and themselves. And what a feast it was! It lasted three days!

It took faith, courage, work and a spirit of *sharing* to make possible the first *Thanksgiving Day* and lay the foundation of our beloved American republic of today.

Saving Groats in the Central Office

The Engineer's Job: To Do for One Dollar What Any One Could Do for Two—Lowering Central Office Maintenance Cost—Improving Operating Force Efficiency—Practical Suggestions for Maintaining Essential Service Standards

By T. De Witt Talmage

There are many items around the average central office that offer themselves most admirably for the study of reducing operating expense. But after several years of scaling down, it is harder now to find safe and sound economies.

Some items eligible for this analyzing process are quite obvious, such as, for example, the consumption of electric light and power current. However, there are some spots where savings can be effected which are not so obvious. A few of these places will be discussed in this article.

Nearly 200 years ago Benjamin Franklin wrote in Poor Richard's Almanac the well-known proverb: "'Tis a well-spent penny that saves a groat." Now since this "groat" coin was worth four pennies, we might take a few liberties with this old proverb and modernize it to: "It's a quarter well spent that saves a dollar."

It has always been generally recognized that where changes or additions to the existing plant will result in reducing the cost of operation, the logical thing is to make the changes. Making such changes is justified where the cost of the project can be paid for in the resulting savings over a period of time. Consequently, it is to the company's advantage to make this type of improvement at a time when costs, comparatively speaking, are low and especially so when the required saving can be realized in a relatively short period.

Some efforts to reduce central office equipment maintenance costs have been doubly successful. By this is meant that not only was the principal objective realized but equally important additional benefits resulted which improved working conditions, increased the efficiency of employes and, in general, tended to give a more uniform grade of service to meet the changing and exacting present-day conditions.

In one central office where the cord-circuit relays were mounted in the operating room, a large amount of trouble was experienced from dust accumulations on the relay springs and contacts. In order to reduce the amount of maintenance time required to care for this trouble, a study was made to determine the source and cause of the dust deposits.

Controlling Dust Deposits.

An examination of the operating room showed that the walls and ceiling directly above the steam radiators were almost black with dirt although they had been cleaned a reasonably short time before. This condition indicated that the unenclosed radiators were causing the hot, dusty air to rise straight up the wall to the ceiling where part of the dirt remained while the rest of the dust was distributed about the room by the air currents until it eventually found its way to the relays and settled there.

Humidification.

To correct this condition the room was carefully cleaned and each radiator was enclosed by a steel radiator cabinet with a grille front. A water container of proper proportions was included in the top of each cabinet in order to secure the necessary humidification. In this manner the air was humidified or moistened from the evaporating pan at the point of radiation, and in a degree proportional to it. Also, a built-in reflector located at the top of the back wall of the cabinet furnished a better directed path for the radiated heat.

The cold air and dust traveled along the floor, passed beneath the radiator and up the back between the cover and the radiator to where the deflector directed it out into the room. This deflector was so placed and curved that the air was guided out into that part of the room where it was useful, rather than straight up to the ceiling.

The dust particles in the warm air were laden with moisture from the humidifying pan and they dropped back to the floor where they belonged. Thus, in addition to decreasing the dust content of the circulating air and localizing the nominal gathering of dust deposits at a distance from the switchboard equipment, the actual circulation of the air itself was improved.

Since the dust deposits remained either in the cabinet or on the floor near the cabinet, the janitor gave special attention during the season to artificial heating, to the cleaning of this part of the operating room. For this purpose a radiator brush was used daily. This brush had a long stem and handle. The brush part was about six or eight inches long consisting of two-inch bristles.

The radiator cabinets not only reduced the amount of dust settling on the relays but, in addition, measurably lengthened the period between cleaning and decorating the walls and ceilings, with its attendant saving in cost of building maintenance. Due to the humidification of the cabinets, the air in the operating room in the fall and winter was no longer as dry as the Sahara Desert but was more comfortable and healthy.

However, the problem was not completely solved. We all know that fresh air is essential in any room, and especially is this true in the operating room. To avoid harmful effects, "vitiated" air, or air that has been breathed, must be mixed with clean, pure air. When windows are opened for this necessary ventilation, the incoming air is a source of dust.

This condition can be corrected to a certain extent by the utilization of a very practical device called by its trade name, Silentaire. This appliance permits the lower sash of a double-hung window to be raised ten inches, makes possible ventilation from the open window, and at the same time retards incoming dust and soot.

An appreciable amount of dust is trapped in the device due to changes of direction of air currents and certain dead air spaces within it.

The advantages of this useful device are not limited to its ability to trap and hold dust while ventilating a room, but its outstanding service is its efficiency in shutting out objectionable street noises from the operating room.

Reducing Interfering Noises.

There are two types of Silentaires available which control outside noises and at the same time permit the passage of fresh air with a limited content of dust. The basic principles involved are (1) noise absorption by acoustical elements, and (2) noise interception by acoustical reflectors.

The first type is a self-contained unit which is attached by means of brackets to the inside jambs of the window at the sill. The device is entirely clear of the sash so that the window can be raised and lowered as usual without removing the Silentaire.

Proverbs from Poor Richard's Almanac

When Prosperity was well mounted, she let go the bridle, and soon came tumbling out of the saddle. 1754

For want of a nail the shoe is lost; for want of a shoe the horse is lost; for want of a horse the rider is lost. 1752

Drive they business; let not that drive thee. 1738

He that sells upon trust, loses many friends, and always wants money. 1736

Forewarn'd, forearm'd. 1736

Keep thy shop, and thy shop will keep thee. 1735

Approve not of him who commends all you say. 1735

Look before, or you'll find yourself behind. 1735

To lengthen thy life, lessen thy meals. 1733

A swinging shutter and two louvers, faced with high-efficiency acoustical material, are set at such an angle that sound waves, striking them, are partially reflected back out and partially absorbed.

The small percentage of sound waves which seep through are subjected to further absorption by the partitions, which are lined on both sides with the acoustical material, and the specially-curved back, also lined. The curved back also reflects the waves which are not absorbed, throwing them against the metal tops of the louvers, from where they are reflected to the outside.

The second type of Silentaire is particularly desirable for installations where clear vision is an important consideration. This type operates entirely on the principle of sound reflection. The special feature is the scientifically-designed, curved, focusing, clear glass reflector which is on the inside. This has been so developed that sound waves, coming through the opening, must strike it, from where they are reflected directly back out.

Another important function of Silentaire, in addition to its main purpose of promoting room cleanliness and quietness, is its ability to improve the ventilating effects within a room.

Improving Ventilation.

To begin with, we need air motion to distribute both moisture and heat throughout the operating room in order to maintain a uniform humidity. Air without motion becomes stratified. Air motion breaks up stratification and gives a more even distribution of heat and humidification.

Let us assume a breeze on the outside of the central office as indicated on the left side of Fig. 1. The air strikes the louvers and the hinged shutter of the Silentaire where it is crowded as shown and, consequently, pressure is built up. The increased pressure forces a stream of fresh air through the noise and dust-minimizing device at an accelerated speed. The force and amount of air is easily controlled by merely varying the opening of the window itself in the usual way.

In passing through the Silentaire, the rapidly-moving air is thrown up against the inside window by the curved inner wall. From there the stream of fresh air is thrown up against the ceiling from where it is gradually diffused throughout the room with the consequent elimination of direct drafts on the backs of the operators.

In Fig. 1 a means of egress is shown in the upper right-hand corner through an adjustable transom into another room. This layout provides cross-ventilation so that the operating-room air, which becomes warmer and rises to the ceiling, is in the direct path of the cross flow and is swept out. At the same time, the friction of the moving-air stream sets up a circular motion to the entire room air, with the result that there is a constant movement throughout the operating room.

Ideal conditions exist during the winter season when Silentaires are installed over radiators that are covered with steel cabinets as shown in Fig. 1. The room air, being heated, humidified and made less dusty, rises and is drawn into the fresh air stream where the cold, incoming air is thoroughly mixed with hot air from the cabinet-covered radiator. Consequently, there are no chilling drafts to cause discomfort and colds.

Also, the incoming air is thrown up against the ceiling, where normally the warm air of the room collects, mixing with the warm air and eliminating the usual condition of a layer of hot air in the upper portion of the room and a layer of cold air along the floor.

The small arrows distributed throughout Fig. 1 indicate the path of the air currents during the season of artificial heating.

Temperature Versus Humidity.

The comfort zone of air temperature varies depending upon the relative humidity (comparative amount of moisture) and air motion. As relative humidity increases, the temperature should fall. Thus under ordinary conditions of air motion the temperature should be only about 65° Fahr. when the relative humidity is 80 per cent or above. As relative humidity decreases, temperature should rise. Thus when the relative humidity is only 15 per cent the temperature should be in the neighborhood of 75° Fahr.

So far as a feeling of comfort or warmth is concerned, a temperature of 75° Fahr. with a relative humidity of 15 per cent will feel no warmer than a temperature of 65° Fahr. with a relative humidity of 90 per cent. Such extremes have certain disadvantages and the question of a practical balance between temperature and humidity now arises: "What combination of temperature and humidity is most desirable?"

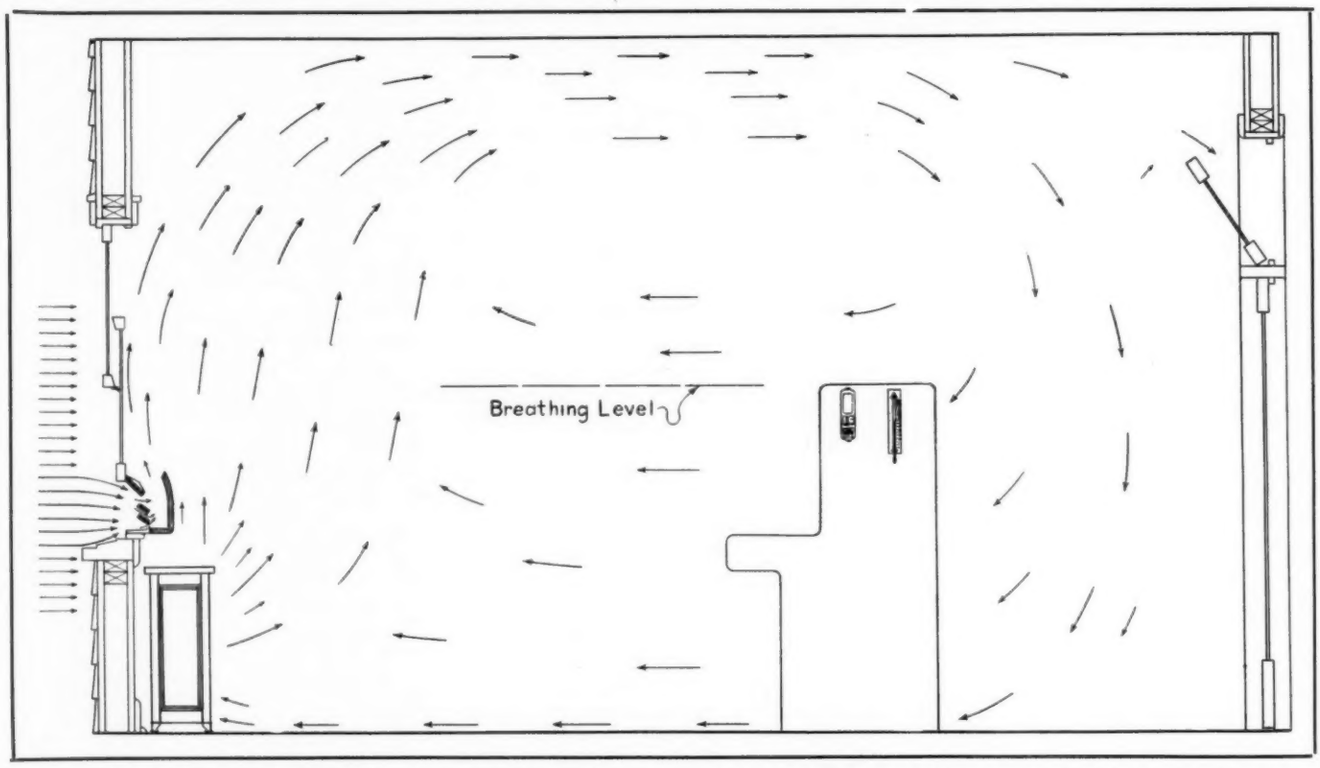


Fig. 1. Sketch Showing Air Circulation in a Small Operating Room. Noise and Dust-Minimizing Device Located in Opened Window Directly Above Cabinet-Covered Radiator. Note Location of Hygrometer and Thermometer on End of Switchboard.

Opinions differ as to what relative humidity is best. Generally speaking, it has been customary to maintain a temperature of about 70° Fahr. with a relative humidity of 60 to 40 per cent to meet comfort requirements. From a practical standpoint, a relative humidity of 45 per cent with a temperature of 68° Fahr. is probably most desirable. Individuals normally clothed are perfectly comfortable under these conditions.

Except in very cold climates or during severely cold weather, 45 per cent relative humidity and 68° Fahr. temperature can be maintained without danger due to condensation of moisture on windows and other cold surfaces.

One company has determined that for every degree above 68° Fahr., 4 per cent is added to the fuel bill. In other words, it costs 20 per cent more to maintain a 73° Fahr. than a 68° Fahr. temperature.

Dry, hot air takes moisture from the body, dries the skin, irritates the mucous membranes of the nose and throat, invites infection by increasing susceptibility to respiratory diseases and promotes deterioration of room furniture and the house furnishings.

For these reasons it is well to keep a close check on humidity conditions of the operating room during the winter months when the natural supply of moisture is at its low ebb. In order to do this, a humidity-indicating instrument should be available. Such an instrument is known as a hygrometer.

Necessary Instruments.

Some types of hygrometers operate on the principle of the expansion of hair in moisture and its contraction when dry. By means of an index hand on a dial, the percentage of moisture in the atmosphere can be read directly. High grade hygrometers are accurate to within 2 or 3 per cent when compared with the sling psychrometer used by the weather bureau of the U. S. Department of Agriculture.

A reliable thermometer is likewise a helpful piece of equipment in a central office. Regardless of the size of the operating room, a thermometer should be installed and used. The instrument itself should be of such a grade that its readings will remain accurate with the passage of time.

For accuracy it is advisable to secure a thermometer which has the graduations appearing on the glass stem of the instrument. Such thermometers are usually accurately calibrated and will give better results than the cheap, house-type thermometers.

The thermometer and hygrometer should be located at the breathing level of the room, and not nearer than five feet to an outside wall. This is important because the temperature of the air varies slightly for every foot rise from the floor to the ceiling and, of course, the temperature is lower near the outside walls because of loss of heat through them.

Some thermometers are equipped with a brass support, which, when screwed to the wall or other support, extends the thermometer about one or two inches, thus allowing a free circulation of air around the bulb. In Fig. 1 the thermometer and hygrometer are shown mounted on one end of the switchboard.

Some instrument companies have assembled the hygrometer and thermometer on a unit mounting base. Such a combination instrument will serve to tell when the air is too dry for safety, too moist for comfort and the exact temperature at all times. Air condition indicating instruments should be read hourly by the chief operator, and the heat and ventilation regulated accordingly. Such a practice will result in more uniformly satisfactory working conditions in the operating room.

Sometimes in making recommendations for accomplishing a given result with a minimum expenditure and effort and money, the reply has come back which virtually amounted to this: that it had never been done that way.

At such times I feel like repeating Woodrow Wilson's succulent statement, which is a classic in describing inaction: "Well, nothing was ever done so systematically as nothing is being done now."

Outside Plant Men Talk Things Over

If You Do Not Find Happiness in Your Work, Something is Wrong.

By Jake, The Lineman.

Mornin', buddies! Are all of you gettin' some real satisfaction and happiness out of the work you do every day? If not, there's somethin' radically wrong! I've ambled aroun' this ole country quite a bit an' I've met quite a few of the workers who keep the wheels of our country in runnin' order.

Some of the workers seemed happy as they went about their work but others did their work as though they hated every part of it. Every time I saw such a worker, an ole quotation by James M. Barrie popped into my mind. It went somethin' like this:

"The secret of happiness is not in doing what you like but in liking what you have to do."

There's a lot of powerful truth in that, and if any of you buddies are going to work every day, just because it means your bread and butter, change your ideas at once! Happiness is the only thing, which all of us are seeking. Since we spend so much of our time at work, it is right and desirable that we should really try to find some pleasure in our work. Happiness is not like an electric current. We can't just turn a switch and find it there. No, we must find the right work; the job that will fill us with complete contentment and satisfaction.

But how can we find the job which will bring us the most happiness? In my opinion, the right job for any man is the thing that he must do next. You buddies, who dislike your work, should let that statement sink in. The next time you go out on a job, try to get some happiness out of it. Do each job so well that you will be proud of your work. Take it from me, it's impossible to do a job that you'll be proud of without gettin' some happiness out of it.

Now I'll betcha some of you are wonderin' just how happiness on the job has anything to do with safety. Wa'll it has plenty to do with safety, an' I don't mean perhaps.

Of course, a dissatisfied worker, who hates his work, doesn't practice safety, because he don't give a hang about it. But a satisfied worker, who takes pride in doin' his work, is bound to practice safety. If he doesn't, an accident is bound to happen sometime—and no worker who takes pride in doing his work well likes to have an accident.

Buddies, change your attitude toward your jobs. Try to find real happiness in your work an' I'll guarantee that you'll find it. Enuf sed!

Now, how about a few signals to practice on durin' the comin' week?

Some folks just don't seem to realize that guns are dangerous an', as a result, durin' the huntin' season of each year hundreds of folks get killed and hundreds of others are seriously injured. Observe these pointers the next time you go huntin': (a) Carry your gun with the muzzle downward; (b) after misfiring wait at least a minute before clearing the gun; (c) before carrying firearms always "break gun," remove bolt or put "safety on."

As winter is comin' on here's a signal to remember: If the radiator of your truck gets to steaming bad, be especially careful when you remove the radiator cap. Many a person has been badly scalded, while removin' a radiator cap.

Frequently a janitor, while scrubbing the floors of a building, allow soapy water to spread where it is apt to cause someone to slip. Such careless practices should be stopped before the soapy water causes someone to have a bad fall.

Every once in a while an accident is caused by improper bracing of trench or manhole excavation. Always make sure that every trench and manhole excavation is properly shored and braced.

Take the proper care of your hands while handling tile. Wear gloves and be on the lookout for cracked or chipped pieces.

Your car may be the cause of your death if you leave the garage doors closed while you're warming it up. No matter how cold it is, open your garage doors wide open, before you even try to start your car.

Poisons, taken in error, have been helping the undertaking business considerably of late. Always make sure you have the correct medicine before you take anything from a bottle. It's a good idea to stick pins in the corks of all bottles containing poisons.

Accidents happen when "pikes" are shifted before the word is given. Always exercise care to protect your fellow employes when "piking" a pole.

You are responsible for your own safety record. Your safety supervisor could preach to you 24 hours a day, but unless you heeded his warnings you could still have an accident. Think it over!

Snow and cold weather often mean frozen fingers, ears and toes to telephone workers who have to be out in all kinds of weather. If some part of your body becomes frozen, try this treatment: (1) Rub the frozen part vigorously with snow or cold water; (2) as the circulation returns, change the temperature of the water gradually until it is finally room temperature; (3) keep the frozen part away from heat; (4) do not rub with warm water until circulation is fully restored.

Thar they be, buddies. An' here's hopin' they do a lot of good. Now I'm gonna ask you buddies to do me a favor. The first December issue of TELEPHONY, which will be December 2, makes the end of my second year of meetin' you buddies in TELEPHONY on Saturday mornings for a discussion on safety. Durin' these two years I've come to know many of you as friends, through the letters I have had from you. Now I'd like to have every buddy, who meets with me on each Saturday morning, to drop me a line, tellin' me what they actually think of the work, which I am trying my best to put over. Does it really help you? What criticism or comments can you make?

Come on, buddies, drop me a line between now and November 30. It will sure be appreciated, and I'll try to pay you back for your trouble by doing my all-fired best to make our department go over with a bang durin' the comin' months!

Guess I'll be amblin'. But remember: "Drop your ole friend, Jake, The Lineman, a line in care of TELEPHONY, 608 South Dearborn street, Chicago, Ill."

A Kink for Getting Proper Angle Cut on Push Guy

The present trend of highway construction work, aided by the Reconstruction Finance Corp., has caused more than the usual number of telephone poles to be moved. Owing to the width of the improved roads, it seems to be necessary to use more "push guys" than formerly.

We find that many linemen are not carpenters and have difficulty in cutting the proper slant at the top of the push guy. In the accompanying illustration is shown a method that we have found to be

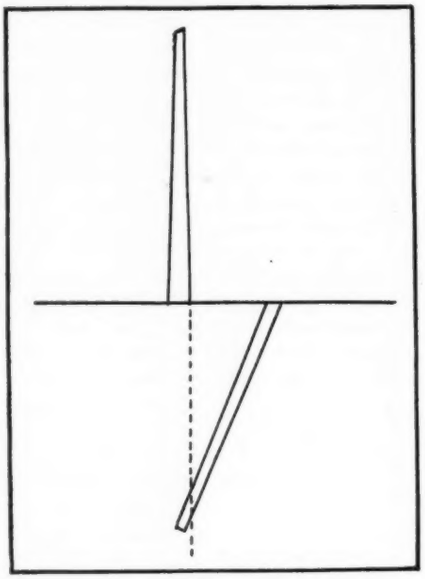


Diagram Illustrating "Sighting" Method of Quickly Determining Proper Slant to Be Cut on Top of Push Pole or Push Brace.

quick and which gives a good fit. Place the pole on the ground, at the proper angle, and sight down the lead. A crosscut saw will then finish the job.

B. R. SAGE, Manager
Traverse Bays Telephone Co.
Central Lake, Mich.

The Uneventful Life of a Telephone Trouble-Shooter.

By "Doc."

Were I a musician I would write a symphony of the lineman, for I believe it has all the possibilities of a hit. I remember well the first time I ever saw linemen was when, as a small boy, I accompanied my father to the county seat. A line gang came in on a railroad hand-car and unloaded near where I was sitting in the wagon waiting for my father. I wondered about these strange creatures who resembled men but wore harness like a mule.

They paraded up the sidewalk with their tools making a terrible clatter and deposited them in a pile in front of a small restaurant, which they entered to eat lunch —and, as I now know, to pester the hashers. I followed them on this march, small-boy fashion, and can still hear the tingle and clatter of their tools, which was accompanied by occasional spasmodic outbursts of song.

The only song I can remember is "If you don't believe old Jones is dead, just look at that hole in the top of his head." Jones was probably some old-time hiker who over-estimated his ability. Little did I dream that day in my childish innocence that I, too, would evolute into one of these strange creatures, hear many more of their songs, and even learn to love the clatter of line tools as with them I marched along life's toilsome journey.

One tall lineman, "Pete" as we called him, always sung lullabys and nursery rhymes in a good tenor. Frank, a soldier of fortune, who had seen a lot of this old world, always sung the uptodate popular numbers, and the Lord only knows where or how he learned them. Butch sang most anything and loved to improvise songs about the members of the gang.

When we loaded onto that bumpy old line wagon—the boss and the skinner on the big tool box in front which answered as a seat, and we lesser lights ranged along each side—the chorus would immediately start up and the harmony would generally last for hours and miles. As the chorus wore off, we would have a few solos rendered by prominent linemen.

On station platforms when we were making a move, with suitcases of the never-rain variety, and tool bags and rolls stacked around, the chorus would go into action to the general delight of the natives. Later, on the train, the music would continue, and our coach would always be crowded. Large gangs don't ordinarily float around the country these days, so the modern lineman misses a lot of what we called fun.

I never thought singing slowed men down in their work, although many claim that it does. It is generally agreed that music makes the heart beat faster, so it seems reasonable that it would likewise tend to make a man perform a routine task faster. Regardless of the effect of music, when the members of the old gang strung out down the line and went into action, they really worked, and I don't believe a gang was ever assembled that could either out-work or out-sing them.

It has been my pleasure to hear the "Coon-jine" of the Southern darkey roustabout on our river steamers; the "Heave-ho" of the stake drivers in the circus; the "Hep-hep" of soldiers on the march; the peculiar choppy little song of the Chinese coolie, as he carries three or four times his own weight on an oscillating bar balanced on his shoulder; and the "Siegeno" of the Filipino. This music, or call it rhythm, seemed to help each and every one of them in his own peculiar way, so why shouldn't the good, or even bad, singing of the lineman tend to do likewise?

Prices in the Metal Markets.

New York City, N. Y., November 20: Copper—Steady; electrolytic spot and future 8¼c. Tin—Firm; spot and nearby, $55.25; future, $55.87. Iron—Quiet; No. 2, f.o.b., eastern Pennsylvania, $17.50; Buffalo, $17.50; Alabama, $13.50. Lead—Steady; spot New York, 4.30c; East St. Louis, 4.15c. Zinc—Dull; East St. Louis spot and future, 4.50c. Antimony—Spot, 7.25c. Quicksilver, $66.00@67.00.

The Financial Side of Companies

Miscellaneous Items of Interest Regarding Financial Matters of Telephone Companies—Bell Companies Gain in Tolls and Earnings—Figures From Monthly Reports of Larger Companies to Interstate Commerce Commission

Class A Companies' August Income Increases 14.2 Per Cent.

According to the August reports filed with the Interstate Commerce Commission by 103 Class A telephone companies, the total number of telephones in service at the end of August was 14,368,127 as compared with 15,635,965 at the end of August, 1932. This is a loss of 1,267,838 telephones or 8.1 per cent.

Total operating revenues for the companies for the month of August were $79,356,278 as compared with $82,805,430 for August of last year, a decrease of $3,449,151 or 4.2 per cent. Operating expenses for the same month were $55,699,732 as compared with $60,924,892 for the corresponding month of last year, a decrease of $5,225,160 or 8.6 per cent.

Net operating income for August last, after deducting taxes and other expenses, amounted to $16,382,543 as compared with $14,345,959 for August, 1932, which is an increase of $2,036,584 or 14.2 per cent.

For the first eight months ended with August, operating revenues amounted to $633,038,528 as compared with $705,476,352 for the corresponding period of last year, a decrease of $72,437,824 or 10.3 per cent. Operating expenses for the eight-months' period of this year were $451,473,868 as compared with $512,288,761 for the corresponding period of last year, a decrease of $60,814,893 or 11.9 per cent.

After deducting taxes and other expenses, the net operating income amounted to $120,811,167 for the first eight months of this year as compared with $129,619,210 for the corresponding period of last year, a decrease of $8,808,043 or 6.8 per cent.

Reports of Large Nebraska Companies for Part of 1933.

The report of the Northwestern Bell Telephone Co. for the first eight months of the year, filed with the Nebraska State Railway Commission, shows gross revenues of $18,486,493, a decrease of $2,587,720, or 12.28 per cent, under the same period last year. Exchange revenues were $13,310,281, a decrease of $1,630,417; toll, $4,407,164, a decrease of $875,835; miscellaneous revenues, $1,035,605, a decrease of $34,283; uncollectible revenues, $266,558, an increase of $47,185.

Total telephone expenses for the same period were $14,685,424, a decrease of 11.97 per cent, or $1,996,717. Net revenues were $3,801,069, a decrease of $591,003; total income, $4,266,572, a decrease of $990,093; interest paid, $1,178,610, an increase of $27,533; net profits, $3,067,962, which lacked $1,140,072 of enough to meet dividend payments.

Stations in service decreased during the period from 629,474 to 560,469, but losses have materially slowed down, falling just below 2,000 for August.

The report of the Lincoln Telephone & Telegraph Co. for the first nine months of 1933 shows total revenues of $1,813,202, a decrease of $284,976, or 13.58 per cent compared with the same period in 1932. Exchange revenues were $1,303,701, a decrease of $193,433; toll, $449,406, a decrease of $65,018; miscellaneous, $60,095, a decrease of $26,525.

Total expenses were $1,474,602, a decrease of $154,600, of which $577,912, a decrease of $113,750, was in operating expenses. Net earnings from operation were $338,600, a decrease of $130,376; total net earnings, $358,978, a decrease of $131,563; interest paid, $132,669, a decrease of $4,-

Items	Month of August				Eight months ended with August			
	1933.	1932.	Increase or decrease (*). Amount.	Ratio, Pct.	1933.	1932.	Increase or decrease (*). Amount.	Ratio, Pct.
Number of company stations in service at end of month	14,368,127	15,635,965	*1,267,836	*8.1	.....	.....	.....	....
Operating revenues:								
Subscribers' station revenues	$49,257,003	$52,963,241	*$3,706,238	*7.0	$406,534,000	$454,031,421	*$47,497,421	*10.5
Public telephone revenues	3,036,995	3,104,322	*67,327	*2.2	25,610,667	28,386,258	*2,775,591	*9.8
Miscellaneous local service revenues	954,172	934,797	19,375	2.1	7,487,649	7,963,812	*476,163	*6.0
Message tolls	20,294,895	19,866,457	428,438	2.2	147,921,719	164,376,747	*16,455,028	*10.0
Miscellaneous toll service revenues	2,549,581	2,556,772	*7,191	*0.3	19,750,662	21,863,832	*2,113,170	*9.7
Revenues from general services and licenses	1,019,524	1,111,744	*92,220	*8.3	8,064,052	9,306,914	*1,242,862	*13.4
Sundry miscellaneous revenues	3,065,950	3,450,461	*384,511	*11.1	25,267,375	28,135,471	*2,868,096	*10.2
Uncollectible operating revenues—Dr.	821,841	1,182,364	*360,523	*30.5	7,597,596	8,588,103	*990,507	*11.5
Operating revenues	$79,356,279	$82,805,430	*$3,449,151	*4.2	$633,038,528	$705,476,352	*$72,437,824	*10.3
Operating expenses:								
Depreciation and extraordinary retirements	$14,994,706	$15,129,176	*134,470	*0.9	$121,913,972	$130,579,612	*$ 8,665,640	*6.6
All other maintenance	14,260,147	16,209,192	*1,949,045	*12.0	113,816,513	130,258,613	*16,442,100	*12.6
Traffic expenses	10,807,361	12,539,532	*1,732,171	*13.8	88,532,300	108,481,263	*19,948,963	*18.4
Commercial expenses	5,826,292	6,537,399	*711,107	*10.9	47,647,430	55,726,887	*8,079,457	*14.5
General office salaries and expenses	4,155,146	4,608,642	*453,496	*9.8	33,763,236	37,493,680	*3,730,444	*9.9
General service and licenses	1,004,554	1,083,316	*78,762	*7.3	7,899,087	9,080,148	*1,181,061	*13.0
All other operating expenses	4,651,526	4,817,625	*166,109	*3.4	37,901,330	40,668,558	*2,767,228	6.8
Operating expenses	$55,699,732	$60,924,892	*$5,225,160	*8.6	$451,473,868	$512,288,761	*$60,814,893	*11.9
Income items:								
Net operating revenues	$23,656,547	$21,880,538	$1,776,009	8.1	$181,564,660	$193,187,591	*$11,622,931	*6.0
Rent from lease of operating property	185	230	*45	....	4,619	4,204	415	....
Rent for lease of operating property	9,437	10,413	*976	....	77,306	82,946	*5,640	....
Net operating income before deducting taxes	$23,647,295	$21,870,355	$1,776,940	8.1	$181,491,973	$193,108,849	*$11,616,876	*6.0
Operating taxes	7,264,752	7,524,396	*259,644	*3.5	60,680,806	63,489,639	*2,808,833	*4.4
Net operating income	$16,382,543	$14,345,959	$2,036,584	14.2	$120,811,167	$129,619,210	*$ 8,808,043	*6.8
Ratio of expenses to revenues, per cent	70.19	73.58	*3.39	....	71.32	72.62	1.30	....
Changes in capital items:								
Increase during month:								
In "Telephone plant"	$ *3,780	*$1,729,566	.....	....	$ 27,591,601	*$ 5,865,775	.....	....
In "Capital stock"	192	27,457	.....	....	50,001,395	*492,606	.....	....
In "Funded debt"	*432,940	*409,455	.....	....	*3,323,482	*13,690,251	.....	....

August Reports Filed by 103 Class A Companies With Interstate Commerce Commission Show Gain in Net Income.

690; balance net profits, $226,309, a decrease of $18,709; dividends paid, $293,779, a decrease of $18,708.

Stations served number 62,917, a loss of 2,381 since December 31 last .

A. T. & T. Keeps Regular Dividend; Bell Financial Reports.

The directors of the American Telephone & Telegraph Co., at their meeting on November 15, declared the regularly quarterly dividend of $2.25 a share on the capital stock, payable January 15 to holders of record December 15.

As was expected in financial circles, the A. T. & T. Co. is keeping its dividend record intact, although payment of the regular disbursements in 1933 will call for a dip into subsidiary and parent company surplus of about $70,000,000 for the year.

This fourth quarterly dividend keeps intact the company's 12-year record of $9 annual payments. The disbursement totals about $42,000,000 to about 700,000 stockholders. Of this about $2,000,000 will be deducted to pay the federal tax on corporation dividends. This tax, which probably will be repealed with the formal repeal of prohibition, is deducted from dividends to individual stockholders, corporation-owning shareholders being exempt because of their general tax liabilities.

Encouragement for the authorization of the regular payment was found in the improved traffic statistics reported by the company in recent months, and the fact that for the first time since 1931 connections of telephones are exceeding cancellations.

The company in September reported a gain of 53,000 units, the first increase since November, 1931. The gain in telephones in service last month was less extensive, but an increase of moderate proportions was enjoyed—a development that has favorable implications in view of the fact that it indicates a definite turn in the tide toward wider use of communication facilities.

September operations of the American Telephone & Telegraph Co. produced the most satisfactory results achieved since 1930, with both gross revenue and income from operations exceeding last year's totals.

Gross of $7,252,699 for the month was about $130,000 larger than for September, 1932, which was $7,123,604. The September operating income, which includes profit from operations only and excludes income in the form of interest, dividends, etc., and is before such operating charges as depreciation and taxes, amounted to $1,472,647, more than double the 1932 figure, which was $701,850.

For the first nine months of this year, gross operating revenue totaled $64,589,785, against $67,778,977 for the like 1932 period, while operating income was $9,053,299, against $6,251,174.

The New England Telephone & Telegraph Co. reports a net income of $5,501,896, equal to $4 a share, for the nine months ended September 30, compared with $7,010,146, or $5.26 a share, in the first nine months of 1932.

For the quarter ended September 30, net income was $2,068,521, equal to $1.55 a share, against $1,882,223, or $1.41 a share, last year.

The Bell Telephone Co. of Pennsylvania reports for the nine months ended September 30, 1933, a net income of $4,439,803 after depreciation, taxes, interest, etc. This is equivalent to $22.20 a share on 200,000 shares (par $100) of 6½ per cent preferred stock. It compares with $5,324,003 or $26.62 a share on preferred stock in first nine months of 1932. All the common stock is owned by A. T. & T. Co.

The net income for the September quarter was $1,409,311 after taxes and charges, equal to $7.04 a share on preferred. It compares with $1,477,777 or $7.39 a share on preferred in the preceding quarter, and with $1,195,789 or $5.97 a share on the preferred in the September quarter of 1932.

The income account for the nine months ended September 30, 1933, compares as follows:

	1933.	1932.	1931.
Gross	$43,850,135	$49,558,990	$55,012,365
Net after dep. & tax	9,011,455	10,972,900	13,759,336
Tot. inc.	9,207,604	11,288,934	14,269,328
Net inc.	4,439,803	5,324,003	8,466,432
Pf. divs.	975,000	975,000	975,000
Com.divs.	6,600,000	6,600,000	6,600,000
Deficit.	$3,135,197	$2,250,997	*$891,432

*Surplus.

The statement of Pacific Telephone & Telegraph Co. and associated companies for the nine months ended September 30, 1933, shows net income of $10,352,126 after depreciation, taxes, interest, etc. This is equivalent after dividend requirements on 6 per cent preferred stock, to $3.69 a share on 1,805,000 shares of common stock. It compares with $12,230,063 or $4.73 a share on common in the first nine months of 1932.

The net earnings thus far this year fell short of dividend requirements by $1,460,374. In the 1932 period the deficit, after dividends, was $936,187.

The total consolidated operating revenues for the company and its associated corporations amounted to $65,061,686 in the first nine months of this year, a substantial drop from the $72,020,934 in the corresponding period of 1932.

For the quarter ended September 30, 1933, net income was $3,757,973 after charges and taxes. It is equal to $1.40 a share on the common stock, comparing with $3,141,430 or $1.06 a share in the preceding quarter and $3,963,531 or $1.51 a share in the September quarter of the previous year.

Net earnings available for dividends of the New Jersey Bell Telephone Co. for the first nine months of this year totaled $3,560,974, as compared with $5,212,874 for the first nine months of last year, a decrease of $1,651,900. The nine months' net was $2.96 a share, as compared with $4.33 a share in the corresponding 1932 period.

For the third quarter of this year, the net was $1,170,854, the equivalent of $0.97 a share on the company's capital stock, compared with $1,713,474, or $1.42 a share, for the third quarter last year.

The net loss of telephones, however, is slackening. During the third quarter the net loss was 7,006 telephones, compared with a net loss of 25,783 in the 1932 third quarter. September losses were 2,421 stations this year, as against 6,740 last year. For the nine months of this year, the net loss has been 24,861, as compared with 39,577 for the corresponding 1932 period.

The tabulated figures of the A. T. & T. Co. for September and the nine months, as reported to the Interstate Commerce Commission, are:

	1933.	1932.
September gross	$7,252,699	$7,123,604
Net oper. income	1,472,647	701,850
Nine months' gross	64,589,785	67,778,977
Net oper. income	9,052,299	6,251,174

Other Bell companies report as follows:

Illinois Bell Telephone Co.

	1933.	1932.
September gross	$5,941,681	$6,200,106
Net oper. income	1,165,140	1,058,849
Nine months' gross	54,066,082	60,193,082
Net oper. income	9,239,092	8,717,125

New York Telephone Co.

September gross	$14,949,188	$15,919,366
Net oper. income	2,674,956	2,936,230
Nine months' gross	136,828,914	150,235,391
Net oper. income	25,331,410	25,890,840

Southwestern Bell Telephone Co.

Gross	$50,015,870	$55,217,594
Nine months' net oper. income	10,689,873	11,316,071

Current Price Quotations on Listed Telephone Stocks.

	Nov. 17, 1933. High.	Low.	Last.
American Telephone & Telegraph Co.	120	119⅜	119½
Bell Telephone Co. of Canada	111	110	111
Bell Telephone Co. of Pennsylvania	113	112¾	112¾
Cincinnati & Suburban Bell Telephone Co.	62½	62½	62½
International Telephone & Telegraph Corp.	14⅞	14¼	14¼
New England Telephone & Telegraph Co.	88½	88½	88½
New York Telephone Co., 6½ pfd.	115	114	114¼
Pacific Telephone & Telegraph Co.	80¼	76	80
Pacific Telephone & Telegraph Co., pfd.	105	105	105
Southwestern Bell Telephone Co.	117	116½	117
Telephone Bond & Share Co., pfd.	10	10	10

BID AND ASKED QUOTATIONS.

	Bid. Nov. 17	Asked.	Bid. Nov. 16.
Lincoln Telephone & Telegraph Co.	90⅛	...	90⅛
Mountain States Telephone & Telegraph Co.	104	107	104
Northwestern Bell Telephone Co., pfd. (6.50)	105¼	107	105¼
Peninsular Telephone Co., $1.40	9	11	9
Peninsular Telephone Co., pfd., 7	71½	75¼	71½
Rochester Telephone Corp., 1st pfd.	95¾	...	95¾
Southern New England Telephone Co., 8	100	102	100
Wisconsin Telephone Co., pfd.	107	109	107

Here and There in Telephone Work

Ohio Rural System Family-Owned and Operated.

The Darrtown Telephone Co. of Darrtown, Ohio, near Oxford, is one of the few Independently-owned companies in the country operated by a family, which is in charge of installations, operations, servicing and billing.

The exchange is located in the home of L. A. Miller (R. R. No. 2, Oxford), the founder of the company as well as present owner and operator. He has 85 subscribers and the peak during prosperous times was 110 subscribers. Mr. Miller, a college graduate, built the first line, a distance of three miles to the home of a neighbor, R. Kramer, who paid $1 per month for the single connection.

Later the line was extended and expanded to a system including practically all of the farm homes and business houses in the village of Darrtown. Mr. Miller sent a son to Cincinnati to get experience in installing and servicing telephones. The system now covers an area of 64 square miles of rather prosperous farming lands.

Mr. Miller was born in Vago county, Indiana, in 1862, and graduated from the Central Normal University in Danville, Ind. He taught schools in Butler county, Ohio, for 26 years. At one time he was principal of the Darrtown schools. Later he was a fur buyer and farmer. He has been in the telephone business for 34 years and takes an active part in state association work.

Stopping the Telephone Pay Station Gypper in New York.

"One of the things which worried us for months isn't worrying us any more," says a columnist in a New York newspaper. "We finally found out why the telephone company, after giving you a wrong number, collects the nickel and demands another one to get the right number, promising to send one of the nickels back by mail.

"This sounded very uneconomic to us. We reasoned it cost two cents' postage to send each nickel back. The bookkeeping, packing, etc., would cost another cent. Thus, by refusing to give back the nickel right then and there, at the coin box, the telephone company was spending eight cents for each wrong number. (Except in cases of people like us; too impatient to stop and give our pedigrees.) Primed with these figures, we went down to see the company, having been invited over to thrash the thing out.

As far as our figures went, we were right. This mailing and bookkeeping is costing the company a pretty penny. But the problem is larger than a postage stamp, we learned. Right after the dial telephones started working, a lot of dishonest people discovered they could drop in a nickel, dial Operator, and claim they had gotten a wrong number. The operator would apologize, return the nickel and get their number free.

It wasn't so bad at first. The company would have been content to let a certain reasonable amount of gyp calls, say, 30,000, get by every month. The trouble was, the discoverers told their friends, and the friends told their friends, and in no time at all the gyp calls, starting from scratch, climbed to 195,000 in Manhattan alone."

In the few months that the new system has been working, refunds dropped down to 100,000 a month. And, what is more important, the company has compiled a tell-tale list of claimants, all classified as to the number of claims which each one put in.

In August, for instance, in a single exchange, it was found that 261 individuals claimed 1,865 wrong numbers. Some individuals have claimed 15 or 20 nickels in a month.

"The company isn't going off half-cocked," the columnist says. "Brazen repeaters are looked over and looked up by the company investigators. No arrests have been made yet, but one of these days the company is going to pounce on a lot of them. An official was telling us that the company has never failed yet to get a conviction; it's willing to give a man sufficient rope to hang himself high."

Iowa District Meetings Continue to Attract Good Crowds.

The accompanying illustrations show some of the telephone men and women who attended recent district meetings held by the Iowa Independent Telephone Association at Remsen on October 18; at Logan on October 19; at Woodward on October 31; at Sidney on November 1; and at Creston on November 2.

The meeting at Remsen on October 18 was well attended by both men and women. That date happened to be the birthday anniversary of W. H. Daudendiek, of West Bend, secretary of the West Iowa Telephone Co. which operates at Remsen. Mr. Daudendiek was present at the meeting and he announced that in honor of his birthday, he would be the host at the noonday luncheon. During the luncheon, he was presented with a birthday cake with candles on it, and all present wished him many happy returns of the day. He made reply in a very fitting talk.

Views of the Telephone People Present at the Iowa District Meetings Held in Logan on October 19 and in Woodward on October 31 by the Iowa Independent Telephone Association.

It was reported that approximately 100 people were present at the district meeting held in Logan on October 19 and that more than 75 gathered in Creston on November 2 for a discussion of general telephone problems and improvement of telephone service.

Secretary Chas. C. Deering was in charge of the general sessions and Miss Anne Barnes, of Des Moines, traveling chief operator of the association, was in

charge of the operators' conferences, working under the auspices of the engineering extension department of Iowa State College.

The complete registration at the recent series of district meetings of the association is reported to total 453 telephone men and women, with 183 different towns being represented.

Upper Photograph Shows Some of the Telephone Men and Women Present at the District Meeting Held by the Iowa Association in Remsen on October 18. In the Foreground Is W. H. Daubendiek, Secretary of the West Iowa Telephone Co. Which Operates at Remsen, Who Was Host at a Noon-Day Luncheon in Honor of His Birthday. Center Photograph Shows a Number of Those Present at the Meeting in Sidney on November 1. Lower Photograph Was Taken of Some of the Telephone People Who Attended the Meeting in Creston on November 2.

Minnesota Company "Tells 'Em" How It Is Helping Community.

The Granite Falls (Minn.) Telephone Co. in a recent two-column advertisement in the local newspaper featured the improvements and betterment of telephone service which it has done during the past few months. Addressed "To Our Subscribers," the advertisement reads:

"We desire to call your attention to some of our recent improvements and additions that we have installed for the improvement and betterment of the service during the past summer:

1. We have installed, connected and now have in service, over 8,000 feet of new cable of various sizes from 10 to 300 pairs—5,000 feet of this cable is aerial cable and 3,000 feet is special underground cable of the armored type.

2. This work was done by local labor—thereby giving local employment to some of our citizens.

3. With this cable installed, it will improve our service in minimizing interruptions to service during storms, thereby insuring reliability of service to our subscribers.

4. By doing this work the past season, we took advantage of the low prices on copper, lead, paper and hardware, thereby saving at least 35 per cent of this investment.

This is called to your attention merely for the purpose of assuring you that the officers and directors of this company are constantly on the alert to improve your service—and in order to continue to serve you with a reliable and satisfactory service at the present low rates, we must take advantage of every opportunity to economize. In following this policy we believe we are doing our part.

Thank you for your continued patronage and support."

The company is a home concern operating 730 telephones in the Granite Falls community. "Good Service and a Desire to Serve" is the slogan carried on the company's letterhead and envelopes. G. L. Wilder, vice-president and manager, endeavors to take advantage of every opportunity for favorable publicity for the company. The advertisement referred to is an excellent example of this.

Subscriber at Athens, Ohio, Finds Telephone Indispensable.

The Athens Home Telephone Co., of Athens, Ohio, of which Dr. C. L. Jones is manager, has recently received a number of expressions from its customers in appreciation of the excellent telephone service furnished. The business men in Athens are gradually learning the great value of the telephone in conducting their everyday activities, and a number of them have taken the time to express their appreciation to the company. Dr. Jones has excellent public relations as the letters testify.

From time to time the company has selected certain letters from those received from its subscribers, and reproduced them in advertisements in the local newspaper. One of the most recent of such letters was from a subscriber expressing the indispensability of the telephone in the conduct of his business.

The telephone company reproduced the letter in a two-column advertisement in the local newspaper under the heading "A Statement to the Telephone Company." It is an excellent testimonial to the company's good service and reads as follows:

Dear Mr. Jones:

The telephone has been an indispensable item of utility during my entire career in the merchandising fields. It would be hard to estimate the extra expense necessary in sales were it not for the telephone. We are strong advocates of a "telephone for food" policy as it represents savings to the housewives.

Residents of Athens are exceedingly fortunate in that they have one of the finest systems to be found in this country. Such a modern system, of course, makes for excellent service and we, as a very large user of the service, appreciate the action of your company in making it available.

Yours very truly,
THE C. D. SHAFER CO.
C. D. Shafer.

During July, August and September the Athens Home company added 80 subscribers to its exchange list. The names of

these new subscribers were made up on a sheet of paper, the size of the telephone directory pages, and sent to all subscribers for insertion in the directory.

Question-Cartoon Develops Sales Ideas and Material.

C. W. Motter, public relations director for the Lincoln Telephone & Telegraph Co., Lincoln, Neb., reports an unusual response to a new method of securing sales ideas and material to be used and compiled for distribution among employes.

The October issue of the Telephone News, company-contact organ, carried a question-cartoon, depicting a conversation between a company installer and a housewife, the subject being "We Don't Have a Telephone. Our Neighbors Have One. We Use Theirs When We Have Need of One."

Prizes were offered for the best answer of the installer, and dozens of letters completing the conversation on his behalf were received. The December issue will carry another question-cartoon on a familiar subject which should create equal interest.

FLASHES AND PLUGS--NEWS BRIEFS, COMMENTS

In the Indiana state crusade against crime, telephone operators in every county-seat will act as alarm dispensers in State Safety Director Feeney's plan of blockading all roads in event of a crime though the use of Indiana national guardsmen, American Legion "minute men" and deputy sheriffs. Each operator will have the names and numbers of all special deputies and will call them for the blockade when a crime breaks. A similar plan has been in successful operation around La Crosse, Wis., for nearly two years.

* * *

Springfield, Ohio, reports a gain of 50 telephones by the local exchange in September. It was the first gain since May, 1930.

* * *

On November 16 there were 800,117 telephones in Chicago, a gain of 122 stations over the preceding week.

* * *

Miss Elizabeth Dunn, night operator for the Indiana Bell Telephone Co. at the Lincoln exchange, Indianapolis, won both the city and state women's golf championships for 1933. She qualified in the national tournament, but lost her match with Virginia Van Vie, the national women's champion, who retained her title.

* * *

After 44 years of service in the telephone business, George McCartney, superintendent of construction for the British Columbia Telephone Co., has retired on a pension.

* * *

The Indianapolis Advertising Club, Indianapolis, Ind., voted to establish an award to be made annually on October 10 in memory of the late Russel Rottger, telephone man. The award is for the best civic or community advertisement or campaign produced during the year.

* * *

Imagine the pleasure and surprise of H. F. McCulla, assistant general commercial superintendent of the Lincoln Telephone & Telegraph Co., Lincoln, Neb., when he opened his mail the morning of November 13, to find a personally-autographed photograph of former President Herbert Hoover, sent to Mr. McCulla by Mr. Hoover from his Palo Alto, Calif., home.

During his term in 1931 as national president of the United States Junior Chamber of Commerce, Mr. McCulla had many pleasant visits with Mr. Hoover at the White House; and it was during one of these visits that the President offered to send "Herb" McCulla a photograph the next time he had some taken. Although two years have elapsed since that promise was made and many trying problems have awaited the former President's attention, Mr. Hoover still had time to remember a pleasant acquaintanceship!

* * *

During his flight across the Atlantic, in the Graf Zeppelin, Charles Ruzicka, of Baltimore, Md., kept in touch by radio-telephone with his wife who was sailing across in the steamship "Deutschland."

* * *

The long distance telephone carried the discussions of currency problems between the United States and the British bankers. The heads of the Bank of England and the New York Federal Reserve Bank use the trans-Atlantic telephone frequently.

* * *

Striking Iowa farmers cut down telephone poles and used them for barriers across the highway to prevent produce trucks to reach the markets.

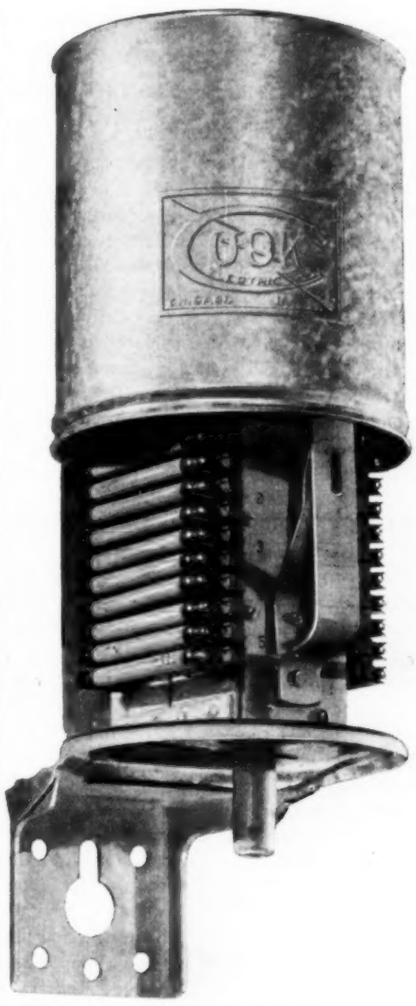
Tough for the telephone companies, but it made business for the pole producers.

* * *

During the last days of the World's Fair, a thrifty man from Boston, Mass., paid his way in one evening so as to get a free telephone call to his home folks. The telephone exhibit was closed when he arrived there, and he angrily demanded his money back at the gate, claiming he had been swindled.

* * *

During the year the number of holders of both common and preferred stock in the Pacific Telephone & Telegraph Co. increased. There are 4,098 common stockholders and 2,705 preferred stock owners.



Cook S-6 Protected Pole Cable Terminal

For the past twenty-five years this S-6 terminal has been extensively used in all parts of the world with excellent results. The materials used in its construction have withstood the rigors of the arctic, the humid tropics and the fog-covered coast lines of North America and Northern Europe.

COOK ELECTRIC CO.
MANUFACTURERS
2700 Southport Ave.
CHICAGO ILLINOIS

What the Commissions Are Doing

Up-to-the-Minute News Regarding the Activities of State and Interstate Commissions, Courts and City Councils in Matters Concerning Telephone Companies—Summary of Commission Orders and Schedule of Telephone Hearings

Federal Public Service Corp. Reorganization Approved.

Federal Judge James H. Wilkerson in Chicago has approved the reorganization plans for the Federal Public Service Corp., of Chicago, former $20,000,000 concern controlled by the Byllesby interests.

The plan provides for a scaling down from $18,000,000 to $6,000,000 in fixed obligations and the issuance of new securities for those deposited with the bondholders' committee. M. M. Bogie, chairman of the bondholders' protective committee, was allowed to intervene in the proceedings.

Florida Commission Calls Hearing on Handset Charges.

The Florida Railroad Commission has ordered all telephone companies operating in Florida to show cause why their service connection charges and their higher rates for types of telephone instruments different from the wall set should not be reduced or eliminated. December 5 is the date set for a hearing at Tallahassee.

"Complaints have been filed with this commission," the order for the hearing said, "as to rates and charges for telephone service furnished by various companies in the state of Florida, and this commission has determined to enter into an investigation on its own motion of all extra charges for services by whatever name the same may be called."

The companies were directed to "show cause, if any you have, why the extra charges for service in connection with the desk set and the handset, or French type of telephone, and service connection charges should not be reduced or eliminated."

The commission explained that the service connection charge covers the beginning of service to a subscriber where the telephone itself already is in place. It does not cover the charge made for original installation of a telephone. Companies make various charges for service connection.

Five Indiana Companies Ordered to Discontinue Handset Charge.

Orders were issued on November 18 by the Indiana Public Service Commission to five telephone companies of the state directing them to discontinue immediately collecting an extra charge for use of the handset type of telephone. The order followed disclosure, through an investigation made by Sherman Minton, public counselor, that permission never had been granted by the commission permitting the companies to make the 25-cent extra monthly charge.

The companies are the Richmond Home Telephone Co. of Richmond, the Wabash Valley Telephone Co. and the Western Telephone & Telegraph Co., both of Williamsport; the Eastern Indiana Telephone Co. of Winchester and the Citizens Telephone Co. of Cambridge City.

Court Hearing on Rate Reduction and Depreciation Orders.

Justice F. Dickinson Letts, of the District of Columbia Supreme Court, Washington, D. C., set January 8 as the date for a hearing on the complaint of the Chesapeake & Potomac Telephone Co. against the District of Columbia Public Utilities Commission, following oral arguments in Washington on November 15. The company's complaint asks that the commission be restrained from enforcing its recent order for a reduction in rates of the company and a monthly credit to the depreciation reserve fund.

The court denied a request by Assistant Corporation Counsel William A. Roberts for a hearing only on the rate reduction order. Attorneys George P. Hoover and T. Baxter Milne, for the telephone company, declared the bill of complaint was based on both orders, which have a kindred interest and should not be separated.

One of the orders required the company to discount its bills to subscribers 10 per cent, beginning September, 1932. The other order required the company to credit monthly on its books interest at the rate of 5 per cent per year on its $6,761,000 depreciation fund. This would result in a reduction of $350,000 annually in its revenues, the company contended, alleging the order and the formula on which it was based were unconstitutional.

The commission based its order on an estimate that the compuany was accumulating depreciation reserves at the rate of $400,000 a year in excess of requirements. Since the order was issued, the Interstate Commerce Commission has assumed jurisdiction over depreciation of all telephone companies. The company told the court the issues involved in the commission's order were not comprehended in the Interstate commission's proceeding.

Minnesota Limits Extra Handset Charge to Two Years.

Under date of November 13 the Minnesota Railroad & Warehouse Commission issued an order authorizing all telephone companies in the state of Minnesota to collect from subscribers for a period of two years of continuous use a 25-cent monthly additional charge, or a total of $6.00, for the use of the handset telephones, effective December 1. The order is the result of an investigation instituted by the commission on its own motion of the handset charge in Minnesota.

A hearing in the matter was held in St. Paul on September 6 and representatives appeared for the Northwestern Bell Telephone Co., the Tri-State Telephone & Telegraph Co., the Minnesota Telephone Association, the Citizens League on Public Utilities of Minnesota, the residents of Rochester, and a number of Independent companies operating in the state.

The main statistical evidence for the telephone companies was presented by H. A. Livermore, statistician for the Northwestern Bell company. The evidence which he submitted purports to show for the Northwestern Bell company, the annual excess cost of the handset over other types of substation apparatus.

Mr. Livermore's testimony was to the effect that such costs should include the average undepreciated cost of desksets, the salvage on change of dial from desk to handsets, and commercial and accounting expenses involved in making the change from desk to handsets.

These specific costs he classified as initial costs, the amount of which he assumed should be spread or amortized over a period of four years and on that basis determines

Answers to the Traffic Questions Presented on Page 11.

1. See introduction to this series of questions and answers.
2. No.
3. The TTC times and supervises the call.
4. Ordinarily she should be ready to accept the ticket immediately. However, under some conditions, after the TTC operator answers the tributary's signal, another signal appears which takes precedence and which she must answer before taking the tributary operator's ticket.
5. Reports relating to the calling party are entered in a similar manner to reports relating to the called party. If for example, you receive a report that the calling party is out for a few minutes, enter "u few (calling place) (time)," and make attempts to reach the calling party in accordance with your instructions for reaching the called party.

the annual charge for such initial cost to be $1.56. Detailed evidence was presented to support his contention.

The telephone companies claim the extra charge of $3.00 per year should be continued for two reasons: "(1) That unlike the retirement of most items of telephone plant, the replacement of a deskset with a handset is brought about by the demand of a particular subscriber and is made solely for his convenience without direct or indirect benefit to any other subscriber. That under the circumstances the excess cost by such subscriber should not be assessed against other subscribers not receiving a like service.

"(2) That if this excess rate is discontinued, it will result in a demand upon the company by its subscribers for replacement of desk and other telephone apparatus by handsets. That if the telephone companies are called upon to make this change, it would result in greatly increasing their investment in telephone apparatus."

The chief witness for the complainants presented evidence to show that there are 55,214 handsets in service in Minnesota with a total annual revenue of $165,642; that out of the 310,235 total stations served, 17.80 per cent are equipped with handsets.

An exhibit was presented showing that the Northwestern Bell company serves 41,478 handsets; the Tri-State company, 12,582; class B companies, 496; class C companies, 576; class D companies, 68; and class E companies, 14. Thus, of the 55,214 handsets in use, only 1,154 are installed by class B, C, D and E companies.

In proportion to the total number of stations served by class B, C, D and E companies, only 3.41 per cent are served by handsets as compared with 23.15 per cent for the Northwestern Bell company and 12.93 per cent for the Tri-State company, indicating that the development in the use of handsets by the smaller companies is of minor consequence.

Based upon the time in service and the extra 25-cent monthly charge, the Northwestern Bell company, since handsets were first installed in 1927, has collected a total of $303,618.96, which sum is equivalent to an average of $7.32 per handset in use, it was stated. The Tri-State company has collected $80,021.52 or an average of $6.36 per handset.

The witness for the complainants testified that he had made no allowance for an assumed undepreciated cost of old desksets which would be retired on account of being replaced by handsets, for the reason that: "Under the Interstate Commerce Commission's classification of accounts for telephone companies, which has been in effect since January 1, 1913, telephone companies have been permitted to charge a schedule of depreciation rates designed to provide for any and all causes of property retirement."

The commission is of the opinion "that the item of $4.28, claimed by the telephone companies as the undepreciated average cost of deskset telephones as of June 30, 1933, which in the future will be retired when replaced by handset telephones and which amount was included in their initial cost, is not an item of cost applicable in the instant case.

"The record shows the excess cost of the handset telephone over the deskset to be $3.52. The commission recognizes the fact that this represents an addition to capital investment upon which telephone companies may be entitled to an allowance for depreciation and return until such time as the excess charge offsets the added investment.

The telephone companies include an item of 72 cents for the conversion of dials used on desksets for use on handset telephones. While the record does not clearly establish the reasonableness of this charge, the commission is of the opinion that this expense is incurred for managerial reasons and is therefore included."

The companies claimed that the change from a deskset to a handset costs 42 cents for commercial and accounting labor which the commission held "does not appear to be justified as the general rate schedules on file with the commission provide an additional charge for the changing of telephone instruments on subscribers' premises; therefore this item is eliminated."

Taking up recurring costs, as claimed by the companies, the commission's order continued: "Telephone companies claim that the annual maintenance of a handset telephone over that of a deskset telephone is approximately 55 cents. The commission is of the opinion that this figure is excessive; that there may have been a slight added cost of maintenance for this type of equipment in the past and particularly during the first few years of their operation, since which time certain improvements and changes have been made to overcome these difficulties. For this item an allowance has been made of 30 cents for the two-year period.

"An allowance of 6 per cent return and 6.4 per cent depreciation is considered reasonable on the additional investment of $3.52, amounting to 42 cents and 46 cents, respectively, for a two-year period, and an allowance of 58 cents for a two-year period for taxes and license revenue."

Data was then presented in tabulated form showing the total initial and recurring costs as found by the commission, following which the commission stated "That the extra charge of 25 cents, collected for a period of two years, reimburses the telephone company for the additional investment and cost of converting the dial from a deskset for use on a handset and provides for depreciation and return, taxes and licensee revenue."

Concluding its opinion, the commission directed "That no further extra charge be

(*Please turn to page* 31.)

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DURO-POWR
KING
DRY CELL
FOR TELEPHONE
SERVICE
Comparative tests over a period of four years prove that the three exclusive improvements built into this battery lengthen its life and reduce replacement expense to a remarkable degree.
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For Best Results Stand Upright

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Telephone Batteries differ in only TWO things—initial capacity and length of life.

Good initial capacity is easily secured, but it is no good unless it is retained throughout idle periods.

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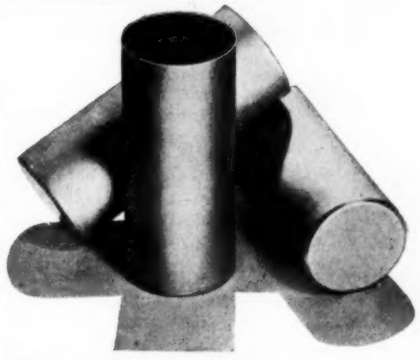

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Makers of all types of dependable Dry Batteries for Radio, Ignition, Flashlight and General Use.

Automatic System "Takes to the Air"

Dial Telephone System of Special Gas-Tight and Light Weight Design Now in Service on U. S. S. Macon—Special Devices Facilitate Communication and Control for Emergency and Normal Usage—Construction Features of Equipment

By H. E. Clapham,
American Automatic Electric Sales Co.

Strowger automatic telephone systems have been installed and placed in service in many strange places and under many odd circumstances, but none quite so strange or odd as in the service of a giant airship.

The newest "lighter than air" craft of the United States Navy, the U. S. S. Macon (ZRS-5), which recently completed a trip from Lakehurst, N. J., to its permanent base at Sunnyvale, Calif., is equipped with up-to-date and scientific devices to facilitate communication and control, both during emergencies and in normal routine operation. Among these is a complete Strowger private automatic telephone system, manufactured by Automatic Electric Co. The Macon's telephone system is the first automatic telephone exchange ever to be placed in service on an airship, and the largest telephone system of any kind ever installed for service in the air.

The safety features of the U. S. S. Macon, which was built by the Goodyear-Zeppelin Corp., in one of the world's largest docks at Akron, Ohio, are complete in every detail. The use of helium, a non-inflammable, non-explosive inert gas, in place of hydrogen, is a conspicuous example. The danger of fire is further minimized by the use of fireproof engine bulkheads, special fire-fighting equipment, careful attention to ventilation, and the use of gas-tight electrical connections.

The new telephone system is a contributing feature not only to safety, but also to the normal routine operation of the ship. The importance of reliable and rapid telephonic communication will be easily understood from a consideration of the size of the airship alone, the overall length being even greater than that of the famous "Graf Zeppelin." Its cubic capacity is almost double that of the latter, adding not only to its lifting capacity but also to its cruising radius.

The specifications for the automatic telephone system, which were drawn up by naval officials in collaboration with the engineers of the Goodyear-Zeppelin Corp., were necessarily very rigid, particularly with respect to weight, compactness and gas-tight qualities. When finally designed and constructed, the telephones and switchboard were lighter in weight by a substantial margin than the prescribed limits.

The automatic telephone switchboard, while employing the standard and tried principles of Strowger automatic design and operation, was necessarily specially constructed for this installation. Wherever consistent with absolutely reliable operation, the standard automatic switchboard parts were made of aluminum or an aluminum alloy. The mounting plates for the relays, supports for the tone and signaling motors, and supports for other apparatus, are also constructed of aluminum and are directly attached to the aluminum switchboard cabinet so as to eliminate the necessity for the usual supporting framework.

Rigid adherence to such economies in weight permitted the construction of a switchboard weighing only 50 pounds, a weight considerably below the specified limit, and only a fraction of the weight

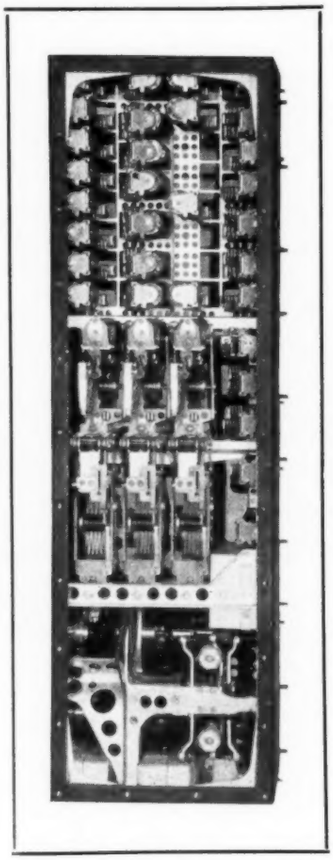
View on the Bow Platform of the U. S. S. Macon Showing One of the Ship's Automatic Telephones. At the Lower Right Is the Winch for Unreeling the Mooring Line—The Auxiliary Control Room of the U. S. S. Macon, Showing Elevator and Rudder Wheels and Telephone. This Control Room Is Located in the Lower Vertical Fin at the Stern of the Ship.

of a standard board of comparable size.

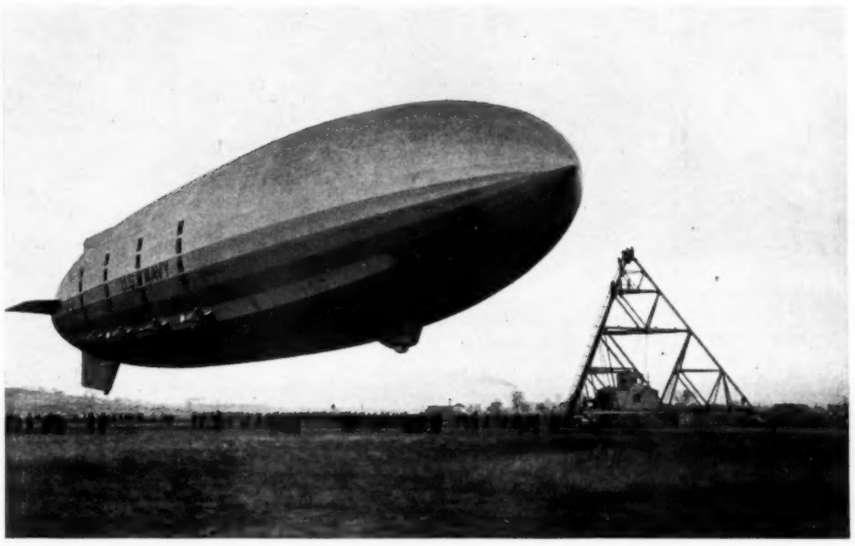
The switchboard houses all central equipment required for the operation of the telephone system, with the exception of the power supply which is furnished from the ship's generators. The system operates on 115 volt, direct current, and is equipped for six lines, 17 stations and three simultaneous conversations, while capacity is provided in the switchboard design for an ultimate of ten lines and 22 stations.

In the construction of the switchboard as well as all other elements of the telephone system, particular attention has been paid to the gas-tight feature of construction, so as to reduce to a minimum the danger of fire from electrical contacts. The switchboard cabinet is of gas-tight design, being equipped with gas-tight covers, and packing glands being provided for all cable or wire entrances.

The automatic telephones are all of special design to comply with the specifications for weight and gas-tight qualities. Three different types of telephones are used—the single-horn type, the double-horn type and the control car type. All of these are similar in general construction, employing monophone handsets and gas-tight dials and hookswitches, and being equipped with both horns and visual (neon lamp) signals. Each telephone also has a neon lighting arrester. The total weight for the 17 telephones installed is 86 pounds, which is nine pounds less than the specified limit.



The Compact Automatic Switchboard for the Macon's Telephone System Is Fitted With a Gas-Tight Cover. This View Shows the Front Cover Removed.



The U. S. S. Macon Is the First Air Vessel to Be Equipped With a Complete Automatic Telephone System.

The system as a whole has several unusual operating features which are specially devised for the convenience and safety of the airship and its crew. One of them is the emergency "right of way" service to the control room telephone, the circuit of which is so arranged that any telephone can, by using an "emergency call number," break in on the line, even though it is in use. Normally, however, the regular number is used, which provides the customary secret service.

Another feature provides for "camping" on a busy line. This means that if, on dialing a number, the busy tone is heard, the connection can be maintained by the calling station, the called station being signaled as soon as the first connection is released.

Another emergency feature is the employment of means whereby the control room telephone may call all other telephones simultaneously and connect all lines to a common talking circuit, regardless of whether any calls are in progress at the time or not.

The normal operation of the telephone system is very similar to that of any standard private automatic switchboard. The user, in making a call, removes the handset, listens for the dial tone, and dials the number of the wanted station. If the called telephone is busy, the caller gets the usual busy tone, and he can either "camp" on the line as previously described, or release the connection.

If the called station is not busy, completion of dialing causes both the horn and lamp signals of the called station to operate, the neon lamp glowing continuously and the horn operating intermittently until the call is answered or the connection released.

Since the system provides for full selective signaling on multi-station lines, only the one telephone wanted is signaled. The horn signals are designed to respond to current of 870 cycles which is furnished from a tone generator in the switchboard cabinet. The neon lamp signals work from the 115-volt direct current power supply.

The cable used for connecting the switchboard and the various telephones was manufactured to rigid specifications. It was designed to prevent the entrance of moisture and armored to protect the contents of the sheath from abrasion. The armor consists of a continuous sheath of aluminum which not only offers complete mechanical protection, but is moisture and gas-proof as well.

Since its installation, the telephone system has been put to regular use, and the success of its operation has been very gratifying. During docking operations, the control room and stern telephones are in practically continuous use.

Failure of Safety Device Causes Service Interruption.

About two-thirds of the population of Fort Wayne, Ind., had a taste on November 11 of going without telephone service. It was the first time in the history of the Home Telephone & Telegraph Co. that a break-down of such magnitude had occurred.

Frank J. Baker, Jr., plant superintendent, explained the difficulty by saying that a switch in the ringing circuit of the direct and trunk line telephones, such as business telephones, short-circuited and burned out. Ordinarily the trouble would have ended at the first fuse, but in this instance the fuse failed to blow out and the trouble went past the first safety device. More than two hours were required to trace and repair the trouble.

By having its operators continually cut in on the trunk lines, the company intercepted several emergency calls and provided messenger service.

Backfilling the Trench.

After the cable is placed in the trench, the excavated dirt should be filled in and thoroughly tamped in order to avoid future settling. Considerable time can be saved in backfilling by using a scraper which can usually be pulled by the truck by means of a rope or cable. At branch points and at terminal poles, the trench should be left open until after all splicing is complete.

General Feed Plan.

When a complete buried cable plant is installed, it is generally advisable to employ clay or iron conduit from the office to the point at which the large size cables begin to branch. One or more spare ducts should be provided for growth. The use of conduit on the principal cables minimizes the possibility of damage to a large number of pairs in the event of excavating work near the cables. It also permits the replacement of the cables in the event that they become filled.

A manhole at the end of the conduit run is not usually necessary. However, the termination point should be carefully specified on a blueprint of the cable plant to facilitate its future location.

Riser Pole Construction.

Terminal poles should be located one or two in each block, the number depending on the drop distribution in the block. It is usually desirable that the poles be placed on property dividing lines. Except where long drops or open-wire circuits (¼th mile or more) feed into the terminal, unprotected terminals can be used.

Riser poles should be from 20 to 30 feet in height, depending upon the drop clearance required. Either a U-shaped metal guard or iron conduit should be provided to give mechanical protection at least six feet up the pole. The end of the guard should extend about one foot below the surface of the ground. Fig. 7 illustrates the arrangement on a typical riser pole. At splice points all parts of the sheath should be given a good coating of compound.

Location of Trouble on Buried Cable.

The location of faults in underground cable, either buried or in conduit, is a more difficult task than is the case with aerial cable. This statement is particularly true for companies which use the "hunt and find" method of locating cable trouble. However, companies equipped with a Wheatstone bridge and an inductive fault-finder, seldom have any difficulty in locating trouble in buried cable.

Cable pairs are checked at periodic intervals and at the first indication of lowered insulation resistance, bridge location measurements are made. The exact location of the fault is then determined by digging down to the cable near the measured location and checking the direction of the fault with the inductive fault-finder. A few trials will readily locate the exact point in trouble.

Location of Trouble on Rural Lines.

The simple bridging rural line, in the eyes of the troubleman, ceases to be quite so simple, after he has driven ten miles out in the country to locate a ground that is finally found a mile from the central office. The testing of toll lines or cable pairs for grounds and short-circuits is an almost exact science, but the rural bridging line does not lend itself to fault location from the wire chief's test desk.

However, a systematic testing procedure, carried out both at the office and out on the line, is the salvation of the rural troubleman who wishes to save himself many weary miles of driving. It is particularly important that a rural line be restored to service as promptly as possible after trouble occurs, for not one but several subscribers are affected; and they are usually all in the same community, thus precluding the use of a neighbor's telephone as would be the case in the event of the failure of a town subscriber's telephone.

Types of Trouble on Rural Lines.

The common types of trouble which occur on rural lines may be classified as short-circuits, grounds, crosses, opens, leaks, and high-resistance joints. In addition, we have the less common fault conditions which, if they are not of the chronic type, may be classified as faults, viz., crosstalk, inductive interference, and dangerous foreign potentials induced from nearby power lines. These latter fault conditions may be, and usually are, the result of some of the more common faults previously listed, such as grounds, or high-resistance joints. Fig. 1 illustrates various types of faults.

Testing Equipment Needed.

Every telephone office should certainly be provided with a wire-chief's voltmeter test panel. Such a unit is almost indispensable as it permits quickly analyzing the nature of trouble on rural and exchange lines, and also shows whether it is inside or outside of the central office.

For outside use in running down faults in rural lines a compact magneto telephone test set provided with an inductive fault-finder, should be a part of every rural troubleman's kit. Equally useful, although not indispensable, is a pocket ohmmeter. For the troubleman who appreciates and understands the use of testing instruments, a rectifier type voltmeter makes a welcome addition to the testing kit carried, as it permits accurate transmission measurements being made.

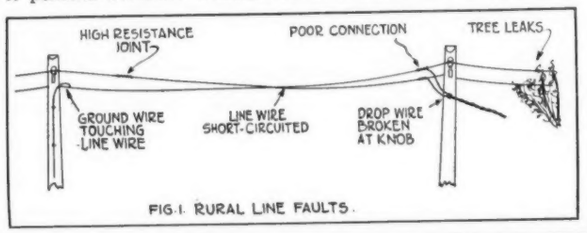


FIG. 1. RURAL LINE FAULTS.

Pocket Ohmmeter.

Magneto Test Set and Inductive Fault Finder.

Transmission Measuring Voltmeter.

FIG 2. TESTING UNITS FOR THE RURAL TROUBLEMAN.

WHAT THE COURTS AND COMMISSIONS ARE DOING.

(*Concluded from page 27.*)

assessed against subscribers or users of handset telephones who, on December 1, 1933, have paid to the telephone companies the extra charge of 25 cents per month continuously for 24 months, and

"That subscribers of record, who have continuously paid the extra charge of 25 cents per month for handset telephone instruments for a period of less than 24 months, receive credit toward the total extra charge of $6.00, and upon expiration of the 24 months of continuous service, such extra charge cease."

South Carolina Company Estimates Loss for This Year.

The South Carolina Railroad Commission was told at a hearing on October 25 that the Greenwood Telephone Co. would end the year with a loss of $516. C. Bruce Barksdale, secretary and treasurer of the company, gave the testimony at an inquiry called in response to a petition of Greenwood subscribers for lower telephone rates.

Mr. Barksdale said the total estimated revenue of the company for 1933 was $46,145 while total operating expenses and taxes for the 12 months were estimated at $46,706.

New York Commission Orders Free Service Continued.

The Earlville Telephone Co. has been notified by the New York Public Service Commission that sufficient justification has not been found for the discontinuance of free calling service between Earlville in Madison county and the subscribers of the Otselic Telephone Corp. in the Lebanon-South Lebanon area.

In 1932 the commission made an order directing the Earlville company to file an agreement entered into between it and the Otselic company providing for service in both directions between subscribers of the Earlville and Otselic companies in the Lebanon-South Lebanon area without toll charge. The Earlville company has asked the commission to terminate the effectiveness of the order and permit the application of a toll charge between Earlville and the Lebanon-South Lebanon area. The request was based on the limited use of the service.

It was shown that 60 such calls were made in a 20-day period, or an average of three a day when a 15-cent toll charge was made, and that when the toll charge was removed the average rose to only five calls per day. It was held that this did not constitute an abuse of the free calling privilege or unduly burden the company and that the moderate use made of the service justifies continuance of the free exchange rather than its discontinuance as claimed by the company.

Summary of Commission Rulings and Schedule of Hearings.

CALIFORNIA.

November 28: Continued hearing in Los Angeles on plan submitted by Ernest W. Watson, assistant telephone engineer of the commission, for lowering rates charged by the Southern California Telephone Co. in suburban communities of Los Angeles.

The plan applies particularly to allegedly-excessive rates now charged in Beverly Hills, Culver City and Montebello for intercity communication. A separate exchange is suggested for Beverly Hills, in which extended service would be offered to all of Los Angeles and certain subscribers in Culver City and Montebello.

FLORIDA.

December 5: Hearing at Tallahassee on commission's order of November 7, to all telephone companies to show cause why their service connection charges and higher rates for telephone instruments different from the wall set should not be reduced or eliminated.

ILLINOIS.

October 18: Pike County Telephone granted authority to suspend service connection charges October 15, 1933, until January 1, 1934.

October 25: Order approving supplemental traffic agreement between the Illinois Commercial Telephone Co. and the Forrest City Telephone Co., excluding from former agreement the reporting and settlements for business passing over jointly-owned toll lines between New Holland and San Jose.

October 25: Order approving contracts between the Postal Telegraph-Cable Co. of Illinois and the Oneida Telephone Exchange; Farmers New Era Telephone Co.; Winnebago County Telephone Co.; New Milford Telephone Co., and the Northwestern Telephone Co., for the use of facilities of the telephone companies in certain operations of receiving, transmitting and delivering telegraph messages and in effect constituting the telephone companies the agents for the telegraph company with respect to the rendering of telegraph service in the territories now served by the telephone companies.

November 7: Schedule of Cooksville Telephone Co., covering discount for prompt payment, presented and no action taken.

November 8: Order approving traffic agreement between the Illinois Commercial Telephone Co. and the Millersburg Mutual Telephone Co., which provides for connections of the toll lines of the former to the telephone system of the latter and the joint handling of toll messages.

INDIANA.

November 18: Order issued directing five companies to cease collecting 25 cents a month additional charge for handsets, on the ground that the commission had never authorized them to make the charge.

MINNESOTA.

November 13: Order issued limiting the additional 25-cent monthly charge for handset telephones, charged by all telephone companies in the state, to two years or until the total amount of $6.00 has been paid by the subscriber, effective December 1.

MISSOURI.

November 8: In the matter of the Southwestern Bell Telephone Co.'s proposed new rate schedule for exchange service at Norborne, ordered that inventory, appraisal and audit heretofore made be approved; schedule of rates now on file formally approved.

November 13: Application filed by the Citizens Public Service Co. of Missouri to sell and of Carl Kind, operating as the Warrenton Telephone Co. to purchase the telephone exchanges at Jonesburg and Wright City.

November 17: Order issued dismissing complaint of the city of Huntsville and of the Darksville Mutual Telephone Co. against the Huntsville Telephone Co. for refusal to furnish telephone service.

November 13: Application filed by Carl Kind, operating as the Warrenton Telephone Co. for authority to issue mortgage notes.

November 13: Application filed by J. W. Jones for a certificate of convenience and necessity to construct a telephone plant in Dadeville.

NEBRASKA.

November 27: Hearing on commission's recent order to the Lincoln Telephone & Telegraph Co. to show cause why it should not discontinue the 25-cent monthly rate on handset equipment to subscribers who have used that service 36 months continuously. The telephone company is preparing a survey which it will submit to show that it cannot meet the same conditions which the commission imposed upon the Northwestern Bell Telephone Co. at its own request recently.

OKLAHOMA.

November 16: Hearing on complaint of the city of Kingfisher against the Western Telephone Corp. regarding a reduction in local exchange telephone rates.

FIG. 1. RURAL LINE FAULTS.

measured location and checking the direction of the fault with the inductive fault-finder. A few trials will readily locate the exact point in trouble.

Telephone Lineman pulling overhead Guy Wire with Model A Coffing Hoist

These hoists are easy to use in any position.

Capacities: ¾, 1½, 3 and 6 ton.

Weights: 14, 25, 34, 65 lbs.

Prices: 28, 40, 50, 95.

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Condensed Telephone News

Officers of Companies Are Urgently Requested to Forward to Us Promptly All Financial and Other Statements as Soon as Issued and Any Items Relating to Construction, Rebuilding, or Changes in Their Plants and Systems

Construction.

CLEVELAND, TEXAS.—Local Lineman R. T. Nicar and a crew of workmen have changed the office of the Southwestern Bell Telephone Co. to its new location in a bungalow built recently.

SPARTA, WIS.—The Monroe County Telephone Co. has been doing some underground work in the past few weeks that has given employment to eight or nine men in addition to its regular crew.

Approximately 3,500 feet of 25-pair cable and 1,500 feet of 50-pair cable are being laid and will improve the efficiency of the system, besides providing extra work for men that needed it. Manager Howard Teasdale superintended the work.

The telephone company officials stated they could have gotten along without these improvements but felt that there is no time like the present to do the work when labor and material are cheap and when men need the work.

Miscellaneous.

INDIANAPOLIS, IND.—Telephone installations exceeded disconnections by more than 1,000 during September and October, according to F. A. Montrose, vice-president and general manager of the Indiana Bell Telephone Co. September this year was the first month since May, 1931, to show a gain in the number of telephones in service.

In 1932, during September and October, the disconnections were greater than connections by nearly 2,500 stations. This decrease in business was gradually eliminated during the summer, following closely the upward trend in business.

NORTH MANCHESTER, IND.—Officials of the Northern Indiana Telephone Co., of North Manchester, have filed papers with the secretary of state changing the address of its principal office to Indianapolis.

GRUNDY CENTER, IOWA.—Stockholders of the defunct Grundy County Mutual Telephone Co. at a meeting last month discussed the personal injury damage suit of James Hasbrook against the company. He is asking $10,000 for loss of sight of one eye, due to an injury from a low hanging telephone wire during construction of the company's line in Grundy Center.

The company's treasury is empty.

TRAER, IOWA.—The local exchange of the Central Iowa Telephone Co. reports almost daily installations of telephones, according to an announcement recently. Some of these are for new subscribers but most of them are replacements for former subscribers.

CONCORDIA, MO.—Last month citizens of Concordia voted favorably on the proposed municipal electric and telephone systems. The vote on the telephone project was 561 to 78. The present system operating in the town is the Concordia Telephone Co. The citizens claim to be dissatisfied with its service and want a municipally-owned system.

It is contemplated that 30 per cent of the necessary funds will be borrowed from the R. F. C. Work will be started as soon as possible, to give work to the city's unemployed.

LINNEUS, MO.—Cecil Clements, formerly of Brookfield, has been appointed local manager here for the Western Telephone Corp. He succeeds Glenn Burnett, who has been transferred to Mountain Grove. Mr. Clements is a graduate of the University of Missouri and comes well recommended into this territory.

ALBUQUERQUE, N. M.—Telephone connections in New Mexico showed net gains in August and September of this year, the first months to show increase since 1931, G. F. Speechly, manager of the Mountain States Telephone & Telegraph Co., reported recently.

CINCINNATI, OHIO—Charging his name was omitted from the classified section of the telephone directory, Dr. Harris H. Vail has filed suit for $25,000 against the publishers and the Cincinnati & Suburban Bell Telephone Co.

CIRCLEVILLE, OHIO.—Earl W. Lutz, general manager of the Citizens Telephone Co., has announced that the accounting departments of five affiliated telephone companies have been moved to the Circleville offices. They are:

The Ohio Community Telephone Co., of Cadiz, Ohio; the Blue Mountain Telephone & Telegraph Co., of Bangor, Pa.; the Pohoqualine Telephone Co., of Saylorsburg, Pa.; the Southern Telephone & Telegraph Co., of Quarryville, Pa.; and the Wisconsin Telephone & Telegraph Co., of Elizabethville, Pa. All these accounting offices were formerly located at Cadiz, Ohio. Accounting for 12 companies operating 49 exchanges is now being done at the Circleville office.

VAN WERT, OHIO.—Everett W. Sweezy, former telephone manager here, has instituted proceedings in common pleas court against the Van Wert Home Telephone Co., for damages of $11,700 for alleged breach of contract.

Mr. Sweezy avers that he was engaged by the company as manager in 1930 for a period of five years at an annual salary of $3,600. He alleges the directors, August 1, 1932, broke the contract by discharging him. The sum asked for represents salary due the three years and three months' period the contract has to run, the petition says.

WILLARD, OHIO—The Attica and New Washington exchanges of the Northern Ohio Telephone Co. have been transferred to the Willard exchange for service and management. The areas at Plymouth and Shiloh were added to the Willard exchange some time ago. The Willard exchange has recently been equipped with new dial equipment and is considered one of the most modern in this section of the state. The Willard exchange is now under the management of W. O. Heabler. Guy A. Weaver, who was manager at Attica, has moved to Willard as service manager.

ST. JOHNSBURY, VT.—A severe snowfall and sleet storm in northern Vermont late last month disrupted power and communication service in many communities. The American Telephone & Telegraph Co. reported great damage, as hundreds of poles and miles of wires were pulled down by the accumulation of snow and ice.

The New England Telephone & Telegraph Co. sent two crews of linemen from Massachusetts to assist in the repair work, together with 500,000 feet of paired wire with which to make replacements.

The Burlington and Montpelier districts were reported to be particularly hard hit by the storm with considerable damage to telephone poles and wires.

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